Jazz Pharmaceuticals plc
Form 10-Q
August 08, 2017
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)
ý Quarterly report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934
For the quarterly period ended June 30, 2017
or
¨ Transition report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934
For the transition period from to
Commission File Number: 001-33500
JAZZ PHARMACEUTICALS PUBLIC LIMITED COMPANY
(Exact name of registrant as specified in its charter)

Ireland	98-1032470
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

Fifth Floor, Waterloo Exchange,
Waterloo Road, Dublin 4, Ireland
011-353-1-634-7800
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ý No ¨
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ý No ¨
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	ý	Accelerated filer	¨
Non-accelerated filer	¨ (Do not check if a smaller reporting company)	Smaller reporting company	¨
Emerging growth company	¨		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ¨
Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ¨ No ý

As of July 31, 2017, 60,064,963 ordinary shares of the registrant, nominal value $0.0001 per share, were outstanding.

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JAZZ PHARMACEUTICALS PLC
QUARTERLY REPORT ON FORM 10-Q FOR THE QUARTER ENDED JUNE 30, 2017

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We own or have rights to various copyrights, trademarks and trade names used in our business in the U.S. and/or other countries, including the following: Jazz Pharmaceuticals®, Xyrem® (sodium oxybate) oral solution, Erwinaze® (asparaginase Erwinia chrysanthemi), Erwinase®, Defitelio® (defibrotide sodium), Defitelio® (defibrotide), Prialt® (ziconotide) intrathecal infusion, CombiPlex® and Vyxeos™ (daunorubicin and cytarabine) liposome for injection. This report also includes trademarks, service marks and trade names of other companies. Trademarks, service marks and trade names appearing in this Quarterly Report on Form 10-Q are the property of their respective owners.

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PART I – FINANCIAL INFORMATION

Item 1. Financial Statements

JAZZ PHARMACEUTICALS PLC
CONDENSED CONSOLIDATED BALANCE SHEETS
(In thousands)
(Unaudited)

	June 30, 2017	December 31, 2016
ASSETS		
Current assets:		
Cash and cash equivalents	$239,213	$365,963
Investments	80,000	60,000
Accounts receivable, net of allowances	238,752	234,244
Inventories	39,658	34,051
Prepaid expenses	28,433	24,501
Other current assets	36,448	29,310
Total current assets	662,504	748,069
Property and equipment, net	136,626	107,490
Intangible assets, net	3,033,103	3,012,001
Goodwill	926,290	893,810
Deferred tax assets, net, non-current	20,158	15,060
Deferred financing costs	8,705	9,737
Other non-current assets	16,638	14,060
Total assets	$4,804,024	$4,800,227
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$28,529	$22,415
Accrued liabilities	169,701	193,268
Current portion of long-term debt	36,094	36,094
Income taxes payable	7,494	4,506
Deferred revenue	8,575	1,123
Total current liabilities	250,393	257,406
Deferred revenue, non-current	20,470	2,601
Long-term debt, less current portion	1,635,800	1,993,531
Deferred tax liability, net, non-current	551,639	556,733
Other non-current liabilities	144,690	112,617
Commitments and contingencies (Note 9)		
Shareholders' equity:		
Ordinary shares	6	6
Non-voting euro deferred shares	55	55
Capital redemption reserve	472	472
Additional paid-in capital	1,720,584	1,665,232
Accumulated other comprehensive loss	(210,249)	(317,333)
Retained earnings	690,164	528,907
Total shareholders' equity	2,201,032	1,877,339
Total liabilities and shareholders' equity	$4,804,024	$4,800,227

The accompanying notes are an integral part of these condensed consolidated financial statements.

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JAZZ PHARMACEUTICALS PLC
CONDENSED CONSOLIDATED STATEMENTS OF INCOME
(In thousands, except per share amounts)
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Revenues:				
Product sales, net	$389,655	$379,110	$763,333	$713,026
Royalties and contract revenues	4,731	2,051	7,106	4,145
Total revenues	394,386	381,161	770,439	717,171
Operating expenses:				
Cost of product sales (excluding amortization of intangible assets)	28,672	23,980	53,737	47,419
Selling, general and administrative	132,328	122,618	276,583	251,383
Research and development	40,157	39,091	85,085	70,343
Acquired in-process research and development	2,000	—	2,000	8,750
Intangible asset amortization	26,186	26,737	51,851	49,379
Total operating expenses	229,343	212,426	469,256	427,274
Income from operations	165,043	168,735	301,183	289,897
Interest expense, net	(18,294)	(12,121)	(37,138)	(24,313)
Foreign exchange loss	(5,427)	—	(6,891)	(819)
Income before income tax provision and equity in loss of investee	141,322	156,614	257,154	264,765
Income tax provision	35,515	42,112	64,675	74,451
Equity in loss of investee	203	—	364	—
Net income	$105,604	$114,502	$192,115	$190,314
Net income per ordinary share:				
Basic	$1.76	$1.89	$3.20	$3.13
Diluted	$1.72	$1.85	$3.13	$3.05
Weighted-average ordinary shares used in per share calculations - basic	60,100	60,499	59,991	60,821
Weighted-average ordinary shares used in per share calculations - diluted	61,463	62,043	61,321	62,329

The accompanying notes are an integral part of these condensed consolidated financial statements.

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JAZZ PHARMACEUTICALS PLC
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Net income	$105,604	$114,502	$192,115	$190,314
Other comprehensive income (loss):				
Foreign currency translation adjustments	90,320	(27,704)	108,432	17,484
Unrealized loss on hedging activities, net of tax benefit of $104, $0, $193 and $0, respectively	(726)	—	(1,348)	—
Other comprehensive income (loss)	89,594	(27,704)	107,084	17,484
Total comprehensive income	$195,198	$86,798	$299,199	$207,798

The accompanying notes are an integral part of these condensed consolidated financial statements.

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JAZZ PHARMACEUTICALS PLC
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)
(Unaudited)

	Six Months Ended June 30,	
	2017	2016
Operating activities		
Net income	$ 192,115	$ 190,314
Adjustments to reconcile net income to net cash provided by operating activities:		
Intangible asset amortization	51,851	49,379
Share-based compensation	52,453	49,616
Depreciation	6,223	5,044
Acquired in-process research and development	2,000	8,750
Loss on disposal of property and equipment	457	37
Deferred income taxes	(29,956)	(10,112)
Provision for losses on accounts receivable and inventory	1,548	1,688
Amortization of debt discount and deferred financing costs	11,379	10,776
Other non-cash transactions	8,000	967
Changes in assets and liabilities:		
Accounts receivable	(3,038)	(22,158)
Inventories	(5,879)	(15,050)
Prepaid expenses and other current assets	(870)	(10,335)
Other long-term assets	(2,267)	(247)
Accounts payable	5,347	6,224
Accrued liabilities	(33,072)	(3,734)
Income taxes payable	2,487	3,398
Deferred revenue	25,320	(476)
Other non-current liabilities	15,533	14,587
Net cash provided by operating activities	299,631	278,668

Investing activities				
Purchases of property and equipment	(11,725	)	(6,028	)
Acquisition of in-process research and development	(2,000	)	(8,750	)
Acquisition of investments	(20,000	)	(53,484	)
Acquisition of intangible assets	—		(150,000	)
Net cash used in investing activities	(33,725	)	(218,262	)
Financing activities				
Proceeds from employee equity incentive and purchase plans	19,071		14,611	
Repayments of long-term debt	(18,047	)	(19,282	)
Payment of employee withholding taxes related to share-based awards	(16,320	)	(14,278	)
Share repurchases	(30,859	)	(163,244	)
Repayments under revolving credit facility	(350,000	)	—	
Net cash used in financing activities	(396,155	)	(182,193	)
Effect of exchange rates on cash and cash equivalents	3,499		968	
Net decrease in cash and cash equivalents	(126,750	)	(120,819	)
Cash and cash equivalents, at beginning of period	365,963		988,785	
Cash and cash equivalents, at end of period	$ 239,213		$ 867,966	

The accompanying notes are an integral part of these condensed consolidated financial statements.

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JAZZ PHARMACEUTICALS PLC
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

The Company and Summary of Significant Accounting Policies

Jazz Pharmaceuticals plc is an international biopharmaceutical company focused on improving patients' lives by identifying, developing and commercializing meaningful products that address unmet medical needs.

We have a diverse portfolio of products and product candidates, with a focus in the areas of sleep and hematology/oncology. Our lead marketed products are:

- Xyrem® (sodium oxybate) oral solution, the only product approved by the U.S. Food and Drug Administration, or FDA, and marketed in the U.S. for the treatment of both cataplexy and excessive daytime sleepiness, or EDS, in patients with narcolepsy;
- Erwinaze® (asparaginase Erwinia chrysanthemi), a treatment approved in the U.S. and in certain markets in Europe (where it is marketed as Erwinase®) for patients with acute lymphoblastic leukemia, or ALL, who have developed hypersensitivity to E. coli-derived asparaginase;
- Defitelio® (defibrotide sodium), a product approved in the U.S. for the treatment of adult and pediatric patients with hepatic veno-occlusive disease, or VOD, also known as sinusoidal obstruction syndrome, or SOS, with renal or pulmonary dysfunction following hematopoietic stem cell transplantation, or HSCT, and in Europe (where it is marketed as Defitelio® (defibrotide)) for the treatment of severe VOD in adults and children undergoing HSCT therapy; and
- Vyxeos™ (daunorubicin and cytarabine) liposome for injection, a product approved in the U.S. for the treatment of adults with newly-diagnosed therapy-related acute myeloid leukemia, or AML, or AML with myelodysplasia-related changes.

Our strategy is to create shareholder value by:

- Growing sales of the existing products in our portfolio, including by identifying and investing in growth opportunities such as new treatment indications and new geographic markets;
- Acquiring or licensing rights to clinically meaningful and differentiated products that are on the market or product candidates that are in late-stage development; and
- Pursuing targeted development of post-discovery differentiated product candidates.

We apply a disciplined approach to allocating our resources between investments in our current commercial and development portfolio and acquisitions or in-licensing of new assets.

Throughout this report, unless otherwise indicated or the context otherwise requires, all references to "Jazz Pharmaceuticals," "the registrant," "we," "us," and "our" refer to Jazz Pharmaceuticals plc and its consolidated subsidiaries. Throughout this report, all references to "ordinary shares" refer to Jazz Pharmaceuticals plc's ordinary shares.

Basis of Presentation

These unaudited condensed consolidated financial statements have been prepared following the requirements of the U.S. Securities and Exchange Commission, or SEC, for interim reporting. As permitted under those rules, certain footnotes and other financial information that are normally required by U.S. generally accepted accounting principles, or U.S. GAAP, can be condensed or omitted. The information included in this Quarterly Report on Form 10-Q should be read in conjunction with our annual consolidated financial statements and accompanying notes included in our Annual Report on Form 10-K for the year ended December 31, 2016.

In the opinion of management, these condensed consolidated financial statements have been prepared on the same basis as the annual consolidated financial statements and include all adjustments, consisting only of normal recurring adjustments, considered necessary for the fair presentation of our financial position and operating results. The results for the three and six months ended June 30, 2017 are not necessarily indicative of the results to be expected for the year ending December 31, 2017, for any other interim period or for any future period.

These condensed consolidated financial statements include the accounts of Jazz Pharmaceuticals plc and our subsidiaries, and intercompany transactions and balances have been eliminated.

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Significant Risks and Uncertainties

Our financial results remain significantly influenced by sales of Xyrem. In the three and six months ended June 30, 2017, net product sales of Xyrem were $298.0 million and $570.4 million, respectively, which represented 76% and 75% of total net product sales, respectively. Our ability to maintain or increase product sales of Xyrem is subject to risks and uncertainties, including the potential U.S. introduction of a generic version of Xyrem before the entry dates specified in our settlements with certain companies that had filed abbreviated new drug applications, or ANDAs, with the FDA seeking approval to market a generic version of Xyrem or on terms that are different from those contemplated by the settlements; the potential U.S. introduction of an alternative product to Xyrem for treating cataplexy and/or EDS in narcolepsy; changes to, increases in or uncertainties around regulatory restrictions, including changes to our Xyrem risk evaluation and mitigation strategy, or REMS, particularly in light of the FDA's waiver of the single shared REMS requirement for sodium oxybate and approval of a separate generic sodium oxybate REMS; any increase in pricing pressure from, or restrictions on reimbursement imposed by, third party payors; changes in healthcare laws and policy, including changes in requirements for patient assistance programs, rebates, reimbursement and coverage by federal healthcare programs, and changes resulting from increased scrutiny on pharmaceutical pricing and REMS programs by government entities; operational disruptions at the Xyrem central pharmacy or any failure to comply with our REMS obligations to the satisfaction of the FDA; any supply or manufacturing problems, including any problems with our sole source sodium oxybate provider; continued acceptance of Xyrem by physicians and patients, even in the face of negative publicity that surfaces from time to time; changes to our label, including new safety warnings or changes to our boxed warning, that further restrict how we market and sell Xyrem; and our U.S.-based sodium oxybate and Xyrem suppliers' ability to obtain sufficient quotas from the U.S. Drug Enforcement Administration, or DEA, to satisfy our needs for Xyrem.

Although Xyrem is protected by patents covering its manufacture, formulation, distribution system and method of use, eight companies have filed ANDAs with the FDA seeking approval to market a generic version of Xyrem. In addition, we are aware of a third party that has stated that it intends to file a new drug application, or NDA, to market a once nightly formulation of sodium oxybate for treatment of cataplexy and/or EDS in narcolepsy under Section 505(b)(2) of the Federal Food, Drug and Cosmetic Act, which allows companies to seek approval of a product that is similar, but not identical, to a previously-approved brand-name product. We filed patent lawsuits against each of the ANDA filers in the U.S. District Court for the District of New Jersey, or the District Court, and an additional lawsuit against the most recent filer, Ascent Pharmaceuticals, Inc., or Ascent, in the U.S. District Court for the Eastern District of New York, or EDNY, where Ascent is incorporated. On April 5, 2017, we settled all lawsuits against the first ANDA filer, West-Ward Pharmaceuticals Corp. (a wholly owned subsidiary of Hikma Pharmaceuticals PLC), which acquired Roxane Laboratories, Inc., or West-Ward, granting West-Ward the right to sell an authorized generic version of Xyrem, or the West-Ward AG Product, commencing on January 1, 2023, or earlier under certain circumstances, and granting West-Ward a license to launch its generic sodium oxybate product as early as six months thereafter. In the second quarter of 2016, we had settled lawsuits with two of the other ANDA filers, granting those filers a license to manufacture, market and sell their generic versions of Xyrem on or after December 31, 2025, or earlier depending on the occurrence of certain events. For a description of our settlements with West-Ward and two of the other ANDA filers, see "Overview—Significant Developments Affecting Our Business" in Part I, Item 2 of this Quarterly Report on Form 10-Q. Lawsuits with the remaining companies that have filed ANDAs with the FDA seeking approval to market a generic version of Xyrem (other than the lawsuits against Ascent) have been consolidated as one case and remain pending. Although no trial date has been set, the trial in this consolidated case could occur as early as the first half of 2018. No trial dates have been set in the lawsuits against Ascent, which remain pending in the District Court and EDNY. For a description of these legal proceedings, see "Legal Proceedings" in Part II, Item 1 of this Quarterly Report on Form 10-Q. We cannot predict the timing or outcome of the ANDA litigation proceedings against the remaining non-settling ANDA filers.

In July 2016, the Patent Trial and Appeal Board, or PTAB, of the U.S. Patent and Trademark Office issued final decisions that the claims of six patents listed in the FDA's publication, "Approved Drug Products with Therapeutic Equivalence Evaluations," or Orange Book, as covering the Xyrem REMS are unpatentable. We filed a notice of appeal

of these decisions on February 22, 2017. If the United States Court of Appeals for the Federal Circuit upholds those decisions on appeal, these claims will be canceled, and we will not be able to enforce these patents. In March 2016, the PTAB partially instituted an inter partes review, or IPR, on three claims of a seventh REMS patent, declining to review 25 of 28 claims. The PTAB issued a final decision in March 2017 that the three claims they reviewed are unpatentable. We filed a notice of appeal of that decision on May 18, 2017, and the Court of Appeals for the Federal Circuit has consolidated the appeal of the March 2017 decision with the pending appeals of the July 2016 decisions. For a description of these legal proceedings, see “Legal Proceedings” in Part II, Item 1 of this Quarterly Report on Form 10-Q. We cannot predict whether additional post-grant patent review challenges will be filed by any of the ANDA filers or any other entity, the outcome of any proceeding, including any appeal, or the impact any IPR or other proceeding might have on ongoing ANDA litigation proceedings or other aspects of our Xyrem business.

On January 17, 2017, the FDA announced approval of the West-Ward ANDA, and on January 19, 2017, the FDA tentatively approved two additional ANDAs for generic versions of Xyrem, one for Amneal Pharmaceuticals, or Amneal, and one for Ohm Laboratories Inc., formerly known as Ranbaxy, Inc., or Ohm. West-Ward’s ANDA approval includes a waiver

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that permits West-Ward to use a separate REMS program from the Xyrem REMS, or the generic sodium oxybate REMS, on the condition that the generic sodium oxybate REMS be open to all future sponsors of ANDAs or NDAs for sodium oxybate products. We were not involved in the development of the generic sodium oxybate REMS. We continue to evaluate potential challenges based on the FDA's waiver of the requirement for a single, shared system REMS in connection with the approvals of the ANDAs, including whether the FDA's waiver decision meets the conditions for such a waiver under applicable law. We cannot predict whether or when we may pursue any such challenges or whether any such challenges would be successful.

The actual timing of any commercial launch of an authorized generic or generic version of Xyrem is uncertain. We do not believe a launch by an ANDA filer is likely to occur prior to either a date agreed in a settlement agreement between us and such ANDA filer or a decision by the District Court, or an appellate court, if applicable, in our ongoing patent litigation. However, notwithstanding our patents, and settlement agreements licensing those patents as of future dates, it is possible that West-Ward, Amneal, Ohm or any other company that receives FDA approval of an ANDA for a generic version of Xyrem or an NDA for another sodium oxybate product could introduce a generic version of Xyrem or other sodium oxybate product before the entry dates specified in our settlement agreements or before our patents expire, including if it is determined that the introduction of the competing product does not infringe our patents, if it is determined that our patents are invalid or unenforceable, or if a non-settling ANDA filer that has received approval for its product decides, before applicable ongoing patent litigation is concluded, to launch a sodium oxybate product at risk of being held liable for damages for patent infringement. In addition, even if we prevail in our ongoing litigation at trial or on appeal, we cannot guarantee that the court will grant an injunction that prevents the ANDA filers from marketing their generic versions of Xyrem. Instead the court may order an ANDA filer that is found to infringe to pay damages in the form of lost profits or a reasonable royalty, which could be significant. We expect that the launch of any generic version of Xyrem, including the West-Ward AG Product or other authorized generic version of Xyrem, or the approval and launch of other products that compete with Xyrem, could have a material adverse effect on our sales of Xyrem and on our business, financial condition, results of operations and growth prospects. For further discussion regarding the risks associated with the West-Ward settlement agreement, the tentative approval of the Amneal and Ohm ANDAs, potential approval or tentative approval of additional ANDAs, the potential launch of a generic version of Xyrem, or the approval and launch of other sodium oxybate or other products that compete with Xyrem, see "Legal Proceedings" in Part II, Item 1 of this Quarterly Report on Form 10-Q and the risk factors under the headings "Risks Related to Xyrem and the Significant Impact of Xyrem Sales," "We face substantial competition from other companies, including companies with greater resources, including larger sales organizations and more experience working with large and diverse product portfolios, than we have," and "Risks Related to Our Intellectual Property" in Part II, Item 1A of this Quarterly Report on Form 10-Q.

In August 2015, we implemented the current Xyrem REMS, and we have submitted and expect to continue to submit ongoing assessments as set forth in the FDA's Xyrem REMS approval letter. However, we cannot guarantee that our implementation and ongoing assessments will be satisfactory to the FDA or that the Xyrem REMS will satisfy the FDA's expectations in its evaluation of the Xyrem REMS on an ongoing basis. Any failure to comply with the REMS obligations could result in enforcement action by the FDA; lead to changes in our Xyrem REMS obligations; negatively affect sales of Xyrem; result in additional costs and expenses for us; and/or take a significant amount of time, any of which could materially and adversely affect our business, financial condition, results of operations and growth prospects. Further, we cannot predict whether the FDA will request, seek to require or ultimately require modifications to, or impose additional requirements on, the Xyrem REMS in connection with the anticipated distribution of the West-Ward AG Product, the approval of the generic sodium oxybate REMS or otherwise or the potential timing, terms or propriety thereof. Any such modifications or additional requirements could make it more difficult or expensive for us to distribute Xyrem, make distribution easier for sodium oxybate competitors, impair the safety profile of Xyrem and/or negatively affect sales of Xyrem.

We may face pressure to modify the Xyrem REMS, or to license or share intellectual property pertinent to the Xyrem REMS, including proprietary data required for safe distribution of sodium oxybate, in connection with the FDA's approval of the generic sodium oxybate REMS. We cannot predict the outcome or impact on our business of any

future action that we may take with respect to the approval of the generic sodium oxybate REMS, or licensing or sharing intellectual property pertinent to the Xyrem REMS or elements of the Xyrem REMS. For more information, see the risk factors under the headings “The launch of a generic version of Xyrem or other sodium oxybate products that compete with Xyrem would adversely affect sales of Xyrem” and “We have incurred and expect to continue to incur substantial costs as a result of litigation or other proceedings relating to patents, other intellectual property rights and related matters, and we may be unable to protect our rights to, or commercialize, our products” in Part II, Item 1A of this Quarterly Report on Form 10-Q.

In September 2016, Jazz Pharmaceuticals, Inc., our wholly owned subsidiary, submitted a Citizen Petition to the FDA requesting that, for safety reasons, the FDA refuse to approve any sodium oxybate ANDA with a proposed package insert or REMS that omits the portions of the Xyrem package insert and the Xyrem REMS that instruct prescribers on adjusting the dose of the product when it is co-administered with divalproex sodium (also known as valproate or valproic acid). On January 17, 2017, the FDA granted the Citizen Petition with respect to the Xyrem package insert. The FDA concluded that it will not approve any sodium oxybate ANDA referencing Xyrem that does not include in its package insert the portions of the

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currently approved Xyrem package insert related to the drug-drug interaction, or DDI, with divalproex sodium. The FDA stated that it did not need to reach the question of whether the DDI information could have been excluded from the generic sodium oxybate REMS materials because it was approving a REMS in connection with a sodium oxybate ANDA including that information. Our Xyrem patents include three method of administration patents relating to a DDI, or DDI patents, covering these instructions on the Xyrem package insert and Xyrem REMS. We cannot predict whether or when one or more of the ANDA filers may pursue a challenge to the FDA's response to the Citizen Petition or whether any such challenges would be successful. Likewise, we cannot predict whether we will be able to maintain the validity of, or will otherwise obtain a judicial determination that the generic sodium oxybate package insert or the generic sodium oxybate REMS will infringe, any of our patents or, if we prevail in proving infringement, whether a court will grant an injunction that prevents any non-settling ANDA filers or any other company introducing a different sodium oxybate product from marketing its product. For a description of these matters, including risks and uncertainties related to our REMS, our REMS patents and our DDI patents, see "Legal Proceedings" in Part II, Item 1 of this Quarterly Report on Form 10-Q, and the risk factors under the headings "Risks Related to Xyrem and the Significant Impact of Xyrem Sales" and "Risks Related to Our Intellectual Property" in Part II, Item 1A of this Quarterly Report on Form 10-Q.

Obtaining and maintaining appropriate reimbursement for Xyrem in the U.S. is increasingly challenging due to, among other things, the attention being paid to healthcare cost containment and prescription drug pricing, pricing pressure from third party payors and increasingly restrictive reimbursement conditions being imposed by third party payors. In this regard, we have experienced and expect to continue to experience increasing pressure from third party payors to agree to discounts, rebates or other pricing terms for Xyrem. Any such restrictive pricing terms or additional reimbursement conditions could have a material adverse effect on our Xyrem revenues. In addition, drug pricing by pharmaceutical companies has recently come under close scrutiny, particularly with respect to companies that have increased the price of products after acquiring those products from other companies. We expect that healthcare policies and reforms intended to curb healthcare costs will continue to be proposed, which could limit the prices that we charge for our products, including Xyrem, limit our commercial opportunity and/or negatively impact revenues from sales of our products. Also, price increases on Xyrem and our other products, and negative publicity regarding pricing and price increases generally, whether with respect to our products or products distributed by other pharmaceutical companies, could negatively affect market acceptance of Xyrem and our other products.

In the three and six months ended June 30, 2017, net product sales of our second largest product, Erwinaze/Erwinase (which we refer to in this report as Erwinaze unless otherwise indicated or the context otherwise requires), were $49.0 million and $100.4 million, respectively, which represented 13% of total net product sales for both periods. We seek to maintain and increase sales of Erwinaze, as well as to make Erwinaze more widely available, through ongoing sales and marketing and research and development activities.

Erwinaze is licensed from and manufactured by a single source, Porton Biopharma Limited, or PBL, which is wholly owned by the U.K. Secretary of State for Health. Our agreement with PBL, including our license, expires in December 2020, subject to five-year extensions unless terminated by either party in writing by December 2018. We cannot predict whether the term of the agreement will be extended or, if extended, the terms of any such extension.

Erwinaze was approved by the FDA under a biologics license application, or BLA, and was launched in the U.S. in November 2011. The FDA's approval of the BLA for Erwinaze includes a number of post-marketing commitments related to the manufacture of Erwinaze by PBL. We cannot predict if or when PBL will comply with its manufacturing-related post-marketing commitments that are part of the BLA approval. In March 2016, the FDA conducted an inspection of the PBL manufacturing facility and issued an FDA Form 483 to PBL that included observations related to a range of operational systems and processes. In April 2016 and September 2016, PBL responded to the FDA Form 483 with its plan, including required remediation activities, to address the observations, and subsequently provided additional information in response to another FDA request. In January 2017, the FDA issued a warning letter to PBL indicating that it was not satisfied with PBL's response to the FDA Form 483, citing significant violations of current Good Manufacturing Practices, or cGMP, for finished pharmaceuticals and significant deviations from cGMP for active pharmaceutical ingredients, or APIs. In March 2017, PBL filed a response to the

warning letter with the FDA. We expect to attend a meeting with PBL and the FDA in the third quarter of 2017 to discuss the warning letter. We cannot predict if or when PBL will correct the violations and deviations to the satisfaction of the FDA or whether the FDA will be satisfied with PBL's response to the warning letter. Any failure to do so to the satisfaction of the FDA could result in the FDA refusing admission of Erwinaze into the U.S., as well as additional enforcement actions by the FDA and other regulatory entities.

In addition, a significant challenge to our ability to maintain current sales levels and to increase sales is our need to avoid supply disruptions of Erwinaze due to capacity constraints, production delays, quality or regulatory challenges or other manufacturing difficulties. The current manufacturing capacity for Erwinaze is completely absorbed by demand for the product. We are working with PBL to evaluate potential expansion of its production capacity to increase the supply of Erwinaze over the longer term and to address the production delays and quality challenges, and related regulatory scrutiny. As

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a consequence of constrained manufacturing capacity, we have had an extremely limited or no ability to build product inventory levels that can be used to absorb disruptions to supply resulting from quality, regulatory or other issues. We have experienced product quality, manufacturing and inventory challenges that have resulted, and may continue to result, in disruptions in our ability to supply certain markets, from time to time and have caused, and may in the future cause, us to implement batch-specific, modified product use instructions. Most recently, we experienced supply disruptions in the second quarter of 2017 in the U.S. and certain other countries, and we expect additional supply disruptions of Erwinaze in the U.S. and other countries in 2017. As capacity constraints and supply disruptions continue, whether as a result of continued quality or other manufacturing issues, regulatory issues or otherwise, we will be unable to build a desired excess level of product inventory, our ability to supply the market may continue to be compromised and physicians' decisions to use Erwinaze have been, and in the future may continue to be, negatively impacted. Additional Erwinaze supply disruptions and/or our inability to expand production capacity could materially adversely affect our sales of and revenues from Erwinaze and our potential future maintenance and growth of the market for this product.

Our ability to successfully and sustainably maintain or grow sales of Erwinaze is subject to a number of risks and uncertainties, including the limited population of patients with ALL and the incidence of hypersensitivity reactions to E. coli-derived asparaginase within that population, our need to apply for and receive marketing authorizations, through the European Union's mutual recognition procedure or otherwise, in certain additional countries if we decide to launch promotional efforts in those countries, as well as those other risks and uncertainties discussed in "Risk Factors" in Part II, Item 1A of this Quarterly Report on Form 10-Q.

In the three and six months ended June 30, 2017, net product sales of Defitelio/defibrotide represented 8% and 9% of total net product sales, respectively. We acquired this product in January 2014 in connection with our acquisition of Gentium S.r.l., or Gentium, which we refer to as the Gentium Acquisition, and secured worldwide rights to the product by acquiring rights to defibrotide in the Americas in August 2014. We began to commercialize Defitelio in certain European countries in 2014. We are in the process of making pricing and reimbursement submissions with respect to Defitelio in those European countries where Defitelio is not yet launched, including in countries where pricing and reimbursement approvals are required for launch. Our ability to realize the anticipated benefits from our investment in Defitelio/defibrotide is subject to risks and uncertainties, including those discussed in "Risk Factors" in Part II, Item 1A of this Quarterly Report on Form 10-Q. In particular, we may not be able to successfully maintain or grow sales of Defitelio in Europe, or obtain marketing approval in other countries, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects. A key challenge to our success in maintaining or growing sales of Defitelio in Europe is our ability to obtain appropriate pricing and reimbursement approvals in those European countries where Defitelio is not yet launched. If we experience delays or unforeseen difficulties in obtaining favorable pricing and reimbursement approvals, planned launches in the affected countries would be delayed, or, if we are unable to ultimately obtain or maintain favorable pricing and reimbursement approvals in countries that represent significant markets, especially where a country's reimbursed price influences other countries, our growth prospects in Europe could be negatively affected.

In March 2016, the FDA approved our NDA for Defitelio for the treatment of adult and pediatric patients with VOD with renal or pulmonary dysfunction following HSCT. We promote Defitelio along with Erwinase to many hematology and oncology specialists who operate in the same hospitals, and we believe that we benefit from operational synergies from this overlap. We launched Defitelio in the U.S. shortly after FDA approval, and our U.S. commercial launch is still at an early stage. Our ability to realize the anticipated benefits from our investment in Defitelio is subject to risks and uncertainties, including the continued acceptance of Defitelio in the U.S. by hospital pharmacy and therapeutics committees and the continued availability of adequate coverage and reimbursement by government programs and third party payors; the limited experience of U.S. physicians in diagnosing and treating VOD, particularly in adults, and the possibility that physicians may not initiate or may delay initiation of treatment while waiting for VOD symptoms to improve, or terminate treatment before the end of the recommended dosing schedule; our ability to successfully maintain or grow sales of Defitelio in Europe and other non-U.S. countries; delays or problems in the supply or manufacture of the product; the limited size of the population of VOD patients

who are indicated for treatment with Defitelio (particularly if changes in HSCT treatment protocols reduce the incidence of VOD diagnosis); our ability to meet the post-marketing commitments and requirements imposed by the FDA in connection with its approval of our NDA for Defitelio; and our ability to obtain marketing approval in other countries and to develop the product for additional indications, as well as those other risks and uncertainties discussed in “Risk Factors” in Part II, Item 1A of this Quarterly Report on Form 10-Q. If sales of Defitelio do not reach the levels we expect, our anticipated revenue from the product will be negatively affected, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

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In addition, we made a significant investment in Vyxeos through the acquisition of Celator Pharmaceuticals Inc., or Celator, in July 2016, or the Celator Acquisition. On August 3, 2017, the FDA approved our NDA for Vyxeos for the treatment of adults with newly-diagnosed therapy-related AML or AML with myelodysplasia-related changes. We are in the process of launching Vyxeos in the U.S. Subject to the successful completion of product testing for compliance with the final specifications included in the approved NDA, we expect to begin shipping Vyxeos in August 2017. In the event that our manufactured product does not comply with these specifications, our launch of Vyxeos would be delayed, which could have a material adverse effect on our business and results of operations. We expect to submit a marketing authorization application for Vyxeos to the European Medicines Agency in the fourth quarter of 2017. Our ability to realize the anticipated benefits from our investment in Vyxeos is subject to additional risks and uncertainties, including our ability to differentiate Vyxeos from other liposomal chemotherapies and generically available chemotherapy combinations with which physicians and treatment centers are more familiar; delays or problems in the supply or manufacture of the product, including the ability of the third parties upon which we rely to manufacture Vyxeos and its APIs to manufacture sufficient quantities in accordance with applicable specifications; the need to establish pricing and reimbursement support for Vyxeos in the U.S. or in other countries; the acceptance of Vyxeos in the U.S. and other countries by hospital pharmacy and therapeutics committees and the availability of adequate coverage and reimbursement by government programs and third party payors; the approval and use of new and novel compounds in AML that are only approved for use in combination with other agents and that have not been tested in combination with Vyxeos; and the limited size of the population of high-risk AML patients who may potentially be indicated for treatment with Vyxeos, particularly given the ongoing clinical trials by other companies with the same patient population, as well as those other risks and uncertainties discussed in “Risk Factors” in Part II, Item 1A of this Quarterly Report on Form 10-Q. If sales of Vyxeos do not reach the levels we expect, or we are unable to obtain regulatory approval for Vyxeos in Europe in a timely manner, or at all, our anticipated revenue from Vyxeos would be negatively affected, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

In May and October 2016 and in February 2017, we received subpoenas from the U.S. Attorney’s Office for the District of Massachusetts requesting documents related to our support of 501(c)(3) organizations that provide financial assistance to Medicare patients and documents concerning the provision of financial assistance to Medicare patients taking drugs sold by us. The Office of the Inspector General has established guidelines that permit pharmaceutical manufacturers to make donations to charitable organizations who provide co-pay assistance to Medicare patients, provided that such organizations, among other things, are bona fide charities, are entirely independent of and not controlled by the manufacturer, provide aid to applicants on a first-come basis according to consistent financial criteria, and do not link aid to use of a donor’s product. If we or our vendors or donation recipients are deemed to fail to comply with relevant laws, regulations or evolving government guidance in the operation of these programs, we could be subject to damages, fines, penalties or other criminal, civil or administrative sanctions or enforcement actions. For more information, see the risk factors under the headings “Changes in healthcare law and implementing regulations, including those based on recently enacted legislation, as well as changes in healthcare policy, may impact our business in ways that we cannot currently predict, and these changes could have a material adverse effect on our business and financial condition” and “We are subject to significant ongoing regulatory obligations and oversight, which may result in significant additional expense and limit our ability to commercialize our products” in Part II, Item 1A of this Quarterly Report on Form 10-Q.

Other key challenges and risks that we face include risks and uncertainties related to:

- the challenges of protecting and enhancing our intellectual property rights;
- the challenges of achieving and maintaining commercial success of our products;
- delays or problems in the supply or manufacture of our products and product candidates, particularly with respect to certain products as to which we maintain limited inventories, our dependence on single source suppliers for most of our products, product candidates and APIs, and the requirement that we and our product suppliers be qualified by the FDA to manufacture product and comply with applicable manufacturing regulations;
-

the need to obtain and maintain appropriate pricing and reimbursement for our products in an increasingly challenging environment due to, among other things, the attention being paid to healthcare cost containment and pharmaceutical pricing in the U.S. and worldwide, including the need to obtain and maintain reimbursement for Xyrem in the U.S. in an environment in which we are subject to increasingly restrictive conditions for reimbursement required by government programs and third party payors;

- our ability to identify and acquire, in-license or develop additional products or product candidates to grow our business;
- the challenges of compliance with the requirements of the FDA, the DEA, and comparable non-U.S. regulatory agencies, including with respect to product labeling, requirements for distribution, obtaining sufficient DEA quotas where needed, marketing and promotional activities, patient assistance programs, adverse event reporting and product recalls or withdrawals;

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- the difficulty and uncertainty of pharmaceutical product development, including the timing thereof, and the uncertainty of clinical success, such as the risk that results from preclinical studies and/or early clinical trials may not be predictive of results obtained in later and larger clinical trials planned or anticipated to be conducted for our product candidates;
- the inherent uncertainty associated with the regulatory approval process, especially as we continue to increase investment in our product pipeline development projects and undertake multiple planned NDA submissions for our product candidates;
- the risks associated with business combination or product or product candidate acquisition transactions, such as the challenges inherent in the integration of acquired businesses with our historical business, the increase in geographic dispersion among our centers of operation and the risks that we may acquire unanticipated liabilities along with acquired businesses or otherwise fail to realize the anticipated benefits (commercial or otherwise) from such transactions; and
- possible restrictions on our ability and flexibility to pursue certain future opportunities as a result of our substantial outstanding debt obligations.

Any of these risks and uncertainties could have a material adverse effect on our business, financial condition, results of operations and growth prospects. All of these risks are discussed in greater detail, along with other risks, in “Risk Factors” in Part II, Item 1A of this Quarterly Report on Form 10-Q.

Derivative Instruments and Hedging Activities

We record the fair value of derivative instruments as either assets or liabilities on the consolidated balance sheets. Changes in the fair value of derivative instruments are recorded each period in current earnings or other comprehensive income (loss), depending on whether a derivative instrument is designated as part of a hedging transaction and, if it is, the type of hedging transaction. For a derivative to qualify as a hedge at inception and throughout the hedged period, we formally document the nature and relationships between the hedging instruments and hedged item. We assess, both at inception and on an on-going basis, whether the derivative instruments that are used in cash flow hedging transactions are highly effective in offsetting the changes in cash flows of hedged items. We assess hedge ineffectiveness on a quarterly basis and record the gain or loss related to the ineffective portion of derivative instruments, if any, to current earnings. If we determine that a forecasted transaction is no longer probable of occurring, we discontinue hedge accounting and any related unrealized gain or loss on the derivative instrument is recognized in current earnings. Derivatives that are not designated and do not qualify as hedges are adjusted to fair value through current earnings.

Concentrations of Risk

Financial instruments that potentially subject us to concentrations of credit risk consist of cash, cash equivalents, investments and derivative contracts. Our investment policy permits investments in U.S. federal government and federal agency securities, corporate bonds or commercial paper issued by U.S. corporations, money market instruments, certain qualifying money market mutual funds, certain repurchase agreements, and tax-exempt obligations of U.S. states, agencies and municipalities and places restrictions on credit ratings, maturities, and concentration by type and issuer. We are exposed to credit risk in the event of a default by the financial institutions holding our cash, cash equivalents and investments to the extent recorded on the balance sheet.

We manage our foreign currency transaction risk and interest rate risk within specified guidelines through the use of derivatives. All of our derivative instruments are utilized for risk management purposes, and we do not use derivatives for speculative trading purposes. As of June 30, 2017, we had foreign exchange forward contracts with notional amounts totaling $255.5 million. As of June 30, 2017, the asset fair value of outstanding foreign exchange forward contracts was $9.0 million. As of June 30, 2017, we had interest rate swap contracts with notional amounts totaling $300.0 million. These outstanding interest rate swap contracts had a net liability fair value of $1.6 million as of June 30, 2017. The counterparties to these contracts are large multinational commercial banks, and we believe the risk of nonperformance is not material.

We are also subject to credit risk from our accounts receivable related to our product sales. We monitor our exposure within accounts receivable and record a reserve against uncollectible accounts receivable as necessary. We extend

credit to pharmaceutical wholesale distributors and specialty pharmaceutical distribution companies, primarily in the U.S., and to other international distributors and hospitals. Customer creditworthiness is monitored and collateral is not required. We monitor deteriorating economic conditions in certain European countries which may result in variability of the timing of cash receipts and an increase in the average length of time that it takes to collect accounts receivable outstanding. Historically, we have not experienced significant credit losses on our accounts receivable, and we do not expect to have write-offs or adjustments to accounts receivable which would have a material adverse effect on our financial position, liquidity or results of operations. As of June 30, 2017, five customers accounted for 89% of gross accounts receivable, including Express Scripts Specialty

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Distribution Services, Inc. and its affiliates, or Express Scripts, which accounted for 75% of gross accounts receivable. As of December 31, 2016, five customers accounted for 90% of gross accounts receivable, including Express Scripts, which accounted for 73% of gross accounts receivable, and McKesson Corporation and affiliates, or McKesson, which accounted for 13% of gross accounts receivable.

We depend on single source suppliers for most of our products, product candidates and their APIs. We commenced manufacturing of Xyrem in our facility in Athlone, Ireland in the third quarter of 2016.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosures in the condensed consolidated financial statements and accompanying notes. Management bases its estimates on historical experience and on assumptions believed to be reasonable under the circumstances. Actual results could differ materially from those estimates.

Net Income per Ordinary Share

Basic net income per ordinary share is based on the weighted-average number of ordinary shares outstanding. Diluted net income per ordinary share is based on the weighted-average number of ordinary shares outstanding and potentially dilutive ordinary shares outstanding.

Basic and diluted net income per ordinary share were computed as follows (in thousands, except per share amounts):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Numerator:				
Net income	$105,604	$114,502	$192,115	$190,314
Denominator:				
Weighted-average ordinary shares used in per share calculation - basic	60,100	60,499	59,991	60,821
Dilutive effect of employee equity incentive and purchase plans	1,363	1,544	1,330	1,508
Weighted-average ordinary shares used in per share calculation - diluted	61,463	62,043	61,321	62,329
Net income per ordinary share:				
Basic	$1.76	$1.89	$3.20	$3.13
Diluted	$1.72	$1.85	$3.13	$3.05

Potentially dilutive ordinary shares from our employee equity incentive and purchase plans and our 1.875% exchangeable senior notes due 2021, or the 2021 Notes, are determined by applying the treasury stock method to the assumed exercise of share options, the assumed vesting of outstanding restricted stock units, or RSUs, the assumed issuance of ordinary shares under our employee stock purchase plan, or ESPP, and the assumed issuance of ordinary shares upon exchange of the 2021 Notes. The potential issue of approximately 2.9 million ordinary shares issuable upon exchange of the 2021 Notes had no effect on diluted net income per ordinary share because the average price of our ordinary shares for the three and six months ended June 30, 2017 and 2016 did not exceed the effective exchange price of $199.77 per ordinary share.

The following table represents the weighted-average ordinary shares that were excluded from the calculation of diluted net income per ordinary share for the periods presented because including them would have an anti-dilutive effect (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
1.875% exchangeable senior notes due 2021	2,878	2,878	2,878	2,878

Options to purchase ordinary shares and RSUs	3,121	3,105	3,264	2,857
Ordinary shares under ESPP	11	66	5	85

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Recent Accounting Pronouncements

In January 2017, the Financial Accounting Standards Board, or FASB, issued ASU No. 2017-04, "Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment" which simplifies the accounting for goodwill impairment by eliminating Step 2 of the current goodwill impairment test. Goodwill impairment will now be the amount by which the reporting unit's carrying value exceeds its fair value, limited to the carrying value of the goodwill. The standard is effective for us beginning January 1, 2020. Early adoption is permitted for any impairment tests performed after January 1, 2017. The new guidance is not expected to have a material impact on our results of operations and financial position.

In January 2017, the FASB issued ASU No. 2017-01, "Business Combinations (Topic 805): Clarifying the Definition of a Business" which provides clarification on the definition of a business and adds guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The standard is effective for us beginning January 1, 2018. Early adoption is permitted. The future impact of ASU No. 2017-01 will be dependent upon the nature of our future acquisition or disposition transactions, if any.

In October 2016, the FASB issued ASU No. 2016-16, "Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory" which requires an entity to recognize the income tax consequences of an intra-entity asset transfer, other than an intra-entity asset transfer of inventory, when the transfer occurs. The standard is effective for us beginning January 1, 2018. Early adoption is permitted. We are currently assessing our approach to the adoption of this standard and the impact on our results of operations and financial position.

In August 2016, the FASB issued ASU No. 2016-15, "Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments". ASU 2016-15 addresses how certain cash receipts and cash payments are presented and classified in the statement of cash flows. The standard is effective for us beginning January 1, 2018. Early adoption is permitted. We do not expect the adoption of this guidance to have a material impact on our consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, "Leases (Topic 842)". Under the new guidance, lessees will be required to recognize a right-of-use asset, which represents the lessee's right to use, or control the use of, a specified asset for the lease term, and a corresponding lease liability, which represents the lessee's obligation to make lease payments under a lease, measured on a discounted basis. ASU No. 2016-02 is effective beginning January 1, 2019 and early application is permitted. ASU No. 2016-02 must be adopted on a modified retrospective transition basis for leases existing at, or entered into after, the beginning of the earliest comparative period presented in the consolidated financial statements. The adoption of ASU No. 2016-02 will result in a significant increase in our consolidated balance sheet for right-of-use assets and lease liabilities. While we are continuing to assess all potential impacts of the standard, we currently believe the most significant impact relates to our accounting for the lease agreement we entered into in January 2015 to lease office space located in Palo Alto, California in a building to be constructed by the landlord, which is accounted for as a build-to-suit arrangement under existing accounting standards, and the lease agreement we entered into in August 2016 for office space in Dublin, Ireland.

In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers". The standard states that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To achieve this, an entity will need to identify the contract with a customer; identify the separate performance obligations in the contract; determine the transaction price; allocate the transaction price to the separate performance obligations in the contract; and recognize revenue when (or as) the entity satisfies each performance obligation. In August 2015, the FASB issued ASU No. 2015-14, "Revenue from Contracts with Customers: Deferral of the Effective Date", which deferred the effective date of ASU No. 2014-09. ASU No. 2014-09 will now be effective for us beginning January 1, 2018 and can be adopted on a full retrospective basis or on a modified retrospective basis. In March 2016, the FASB issued ASU No. 2016-08, "Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations", which clarifies the implementation guidance on principal versus agent considerations. In April 2016, the FASB issued ASU No. 2016-10, "Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing", which clarifies certain aspects of identifying performance obligations and licensing

implementation guidance. In May 2016, the FASB issued ASU No. 2016-12, “Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Practical Expedients” related to disclosures of remaining performance obligations, as well as other amendments to guidance on collectability, non-cash consideration and the presentation of sales and other similar taxes collected from customers. We plan to adopt ASU No. 2014-09 at its effective date on a modified retrospective basis. We have substantially completed our review of existing revenue contracts and currently do not anticipate that the implementation of ASU No. 2014-09 will have a material impact on our results of operations and financial position. We are continuing to review the impact that the new standard will have on our financial statement disclosures.

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2. Cash and Available-for-Sale Securities

Cash, cash equivalents and investments consisted of the following (in thousands):

	June 30, 2017					
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value	Cash and Cash Equivalents	Investments
Cash	$94,011	$ —	$ —	$94,011	$ 94,011	$ —
Time deposits	140,000	—	—	140,000	60,000	80,000
Money market funds	85,202	—	—	85,202	85,202	—
Totals	$319,213	$ —	$ —	$319,213	$ 239,213	$ 80,000

	December 31, 2016					
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value	Cash and Cash Equivalents	Investments
Cash	$215,963	$ —	$ —	$215,963	$ 215,963	$ —
Time deposits	210,000	—	—	210,000	150,000	60,000
Totals	$425,963	$ —	$ —	$425,963	$ 365,963	$ 60,000

Cash equivalents and investments are considered available-for-sale securities. We use the specific-identification method for calculating realized gains and losses on securities sold and include them in interest expense, net in the condensed consolidated statements of income. Our investments balance represents time deposits with original maturities of greater than three months.

3. Fair Value Measurement

The following table summarizes, by major security type, our available-for-sale securities and derivative contracts as of June 30, 2017 and December 31, 2016 that were measured at fair value on a recurring basis and were categorized using the fair value hierarchy (in thousands):

	June 30, 2017			December 31, 2016	
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Total Estimated Fair Value	Significant Other Observable Inputs (Level 2)	Total Estimated Fair Value
Assets:					
Available-for-sale securities:					
Time deposits	$—	$ 140,000	$ 140,000	$210,000	$ 210,000
Money market funds	85,202	—	85,202	—	—
Interest rate contracts	—	21	21	—	—
Foreign exchange forward contracts	—	8,984	8,984	—	—
Totals	$85,202	$ 149,005	$ 234,207	$210,000	$ 210,000
Liabilities:					
Interest rate contracts	$—	$ 1,600	$ 1,600	$—	$ —
Totals	$—	$ 1,600	$ 1,600	$—	$ —

As of June 30, 2017, our available-for-sale securities included time deposits and money market funds and their carrying values were approximately equal to their fair values. Time deposits were measured at fair value using Level 2 inputs and money market funds were measured using quoted prices in active markets, which represent Level 1 inputs. Level 2 inputs, obtained from various third party data providers, represent quoted prices for similar assets in active markets, or these inputs were derived from observable market data, or if not directly observable, were derived from or corroborated by other observable market data.

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Our derivative assets and liabilities include interest rate and foreign exchange derivatives that are measured at fair value using observable market inputs such as forward rates, interest rates, our own credit risk as well as an evaluation of our counterparties' credit risks. Based on these inputs, the derivative assets and liabilities are classified within Level 2 of the fair value hierarchy.

There were no transfers between the different levels of the fair value hierarchy in 2017 or in 2016.

As of June 30, 2017, the estimated fair value of our 2021 Notes was approximately $631 million. The fair value of the 2021 Notes was estimated using quoted market prices obtained from brokers (Level 2). The estimated fair value of our borrowings under our term loan and revolving credit facilities were approximately equal to their respective book values based on the borrowing rates currently available for variable rate loans (Level 2).

4. Derivative and Hedging Activities

We are exposed to certain risks arising from operating internationally, including fluctuations in interest rates on our outstanding revolving credit facility and term loan borrowings and fluctuations in foreign exchange rates primarily related to the translation of euro-denominated net monetary liabilities, including intercompany balances, held by subsidiaries with a U.S. dollar functional currency. We manage these exposures within specified guidelines through the use of derivatives. All of our derivative instruments are utilized for risk management purposes, and we do not use derivatives for speculative trading purposes.

To achieve a desired mix of floating and fixed interest rates on our variable rate debt, we entered into interest rate swap agreements in March 2017 which are effective from March 3, 2017 until July 12, 2021. These agreements hedge contractual term loan interest rates. As of June 30, 2017, the interest rate swap agreements had a notional amount of $300.0 million. As a result of these agreements, the interest rate on a portion of our term loan borrowings was fixed at 1.895%, plus the borrowing spread, until July 12, 2021.

The effective portion of changes in the fair value of derivatives designated as and that qualify as cash flow hedges is recorded in accumulated other comprehensive loss and is subsequently reclassified into earnings in the period that the hedged forecasted transaction affects earnings. The ineffective portion of the change in fair value is recognized directly in earnings. The impact on accumulated other comprehensive loss and earnings from derivative instruments that qualified as cash flow hedges for the three and six months ended June 30, 2017 was as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
Interest Rate Contracts:	2017	2016	2017	2016
Loss recognized in accumulated other comprehensive loss, net of tax	$(1,320)	$ —	$(2,175)	$ —
Loss reclassified from accumulated other comprehensive loss to interest expense, net of tax	$594	$ —	$827	$ —

Assuming no change in LIBOR-based interest rates from market rates as of June 30, 2017, $1.4 million of losses recognized in accumulated other comprehensive loss will be reclassified to earnings over the next 12 months. The gain related to the ineffective portion of derivative instruments that qualified as cash flow hedges for the three and six months ended June 30, 2017 was $0.1 million and $0.0 million, respectively.

We enter into foreign exchange forward contracts, with durations of up to 365 days, designed to limit the exposure to fluctuations in foreign exchange rates related to the translation of certain non-U.S. dollar denominated intercompany balances. Hedge accounting is not applied to these derivative instruments as gains and losses on these hedge transactions are designed to offset gains and losses on underlying balance sheet exposures. As of June 30, 2017, the notional amount of foreign exchange contracts where hedge accounting is not applied was $255.5 million. The foreign exchange loss in our condensed consolidated statements of income included a gain of $9.0 million associated with the foreign exchange contracts not designated as hedging instruments for the three and six months ended June 30, 2017. The cash flow effects of our derivative contracts for the six months ended June 30, 2017 are included within net cash provided by operating activities in the condensed consolidated statements of cash flows.

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The following table summarizes the fair value of outstanding derivatives as of June 30, 2017 (in thousands):

	June 30, 2017			
	Asset Derivatives		Liability Derivatives	
	Balance Sheet Location	Fair Value	Balance Sheet Location	Fair Value
Derivatives designated as hedging instruments:				
Interest rate contracts	Other non-current assets	$21	Accrued liabilities	$1,600
Derivatives not designated as hedging instruments:				
Foreign exchange forward contracts	Other current assets	8,984	Accrued liabilities	—
Total fair value of derivative instruments		$9,005		$1,600

Although we do not offset derivative assets and liabilities within our condensed consolidated balance sheets, our International Swap and Derivatives Association agreements provide for net settlement of transactions that are due to or from the same counterparty upon early termination of the agreement due to an event of default or other termination event. The following table summarizes the potential effect on our condensed consolidated balance sheets of offsetting our interest rate contracts and foreign exchange forward contracts subject to such provisions (in thousands):

	June 30, 2017					
				Gross Amounts Not Offset in the Consolidated Balance Sheet		
Description	Gross Amounts of Recognized Assets/Liabilities	Gross Amounts Offset in the Consolidated Balance Sheet	Net Amounts of Assets/Liabilities Presented in the Consolidated Balance Sheet	Derivative Financial Instruments	Cash Collateral Received (Pledged)	Net Amount
Derivative assets	$1,139	$ —	$ 1,139	$(394)	$ —	$ 745
Derivative liabilities	(394)	—	(394)	394	—	—

There were no outstanding derivatives as of December 31, 2016.

5. Inventories

Inventories consisted of the following (in thousands):

	June 30, 2017	December 31, 2016
Raw materials	$2,591	$ 1,547
Work in process	15,689	18,689
Finished goods	21,378	13,815
Total inventories	$39,658	$ 34,051

6. Goodwill and Intangible Assets

The gross carrying amount of goodwill was as follows (in thousands):

Balance at December 31, 2016	$893,810
Foreign exchange	32,480
Balance at June 30, 2017	$926,290

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The gross carrying amounts and net book values of our intangible assets were as follows (in thousands):

	June 30, 2017				December 31, 2016		
	Remaining Weighted-Average Useful Life (In years)	Gross Carrying Amount	Accumulated Amortization	Net Book Value	Gross Carrying Amount	Accumulated Amortization	Net Book Value
Acquired developed technologies	10.9	$1,562,033	$(483,397)	$1,078,636	$1,477,618	$(410,523)	$1,067,095
Manufacturing contracts	0.6	12,214	(10,506)	1,708	11,278	(8,292)	2,986
Trademarks	—	2,895	(2,895)	—	2,872	(2,872)	—
Total finite-lived intangible assets		1,577,142	(496,798)	1,080,344	1,491,768	(421,687)	1,070,081
Acquired in-process research and development assets		1,952,759	—	1,952,759	1,941,920	—	1,941,920
Total intangible assets		$3,529,901	$(496,798)	$3,033,103	$3,433,688	$(421,687)	$3,012,001

The increase in the gross carrying amount of intangible assets as of June 30, 2017 compared to December 31, 2016 reflected the positive impact of foreign currency translation adjustments, which was primarily due to the strengthening of the euro against the U.S. dollar.

The assumptions and estimates used to determine future cash flows and remaining useful lives of our intangible and other long-lived assets are complex and subjective. They can be affected by various factors, including external factors, such as industry and economic trends, and internal factors such as changes in our business strategy and our forecasts for specific product lines.

Based on finite-lived intangible assets recorded as of June 30, 2017, and assuming the underlying assets will not be impaired and that we will not change the expected lives of the assets, future amortization expenses were estimated as follows (in thousands):

Year Ending December 31,	Estimated Amortization Expense
2017 (remainder)	$ 54,020
2018	105,110
2019	104,883
2020	103,661
2021	102,662
Thereafter	610,008
Total	$ 1,080,344

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7. Certain Balance Sheet Items

Property and equipment consisted of the following (in thousands):

	June 30, 2017	December 31, 2016
Construction-in-progress	$60,347	$ 33,427
Land and buildings	46,246	46,033
Manufacturing equipment and machinery	20,397	19,596
Computer software	19,218	17,832
Leasehold improvements	12,549	9,328
Computer equipment	12,172	10,980
Furniture and fixtures	3,372	2,436
Subtotal	174,301	139,632
Less accumulated depreciation and amortization	(37,675)	(32,142)
Property and equipment, net	$136,626	$ 107,490

Accrued liabilities consisted of the following (in thousands):

	June 30, 2017	December 31, 2016
Rebates and other sales deductions	$74,829	$ 72,344
Employee compensation and benefits	39,367	43,363
Royalties	8,937	11,643
Accrued construction-in-progress	6,833	1,597
Accrued interest	4,747	5,179
Sales returns reserve	4,032	4,366
Selling and marketing accruals	3,517	3,924
Professional fees	3,438	4,596
Inventory-related accruals	2,657	3,350
Clinical trial accruals	2,393	10,139
Accrued contract termination fees	—	11,612
Other	18,951	21,155
Total accrued liabilities	$169,701	$ 193,268

8. Debt

The following table summarizes the carrying amount of our indebtedness (in thousands):

	June 30, 2017	December 31, 2016
1.875% exchangeable senior notes due 2021	$575,000	$ 575,000
Unamortized discount on 1.875% exchangeable senior notes due 2021	(91,636)	(101,094)
1.875% exchangeable senior notes due 2021, net	483,364	473,906
Borrowings under revolving credit facility	500,000	850,000
Term loan	688,530	705,719
Total debt	1,671,894	2,029,625
Less current portion	36,094	36,094
Total long-term debt	$1,635,800	$ 1,993,531

Exchangeable Senior Notes

The 2021 Notes were issued by Jazz Investments I Limited, or the Issuer, a 100%-owned finance subsidiary of Jazz Pharmaceuticals plc. The Issuer's obligations under the 2021 Notes are fully and unconditionally guaranteed on a senior unsecured basis by Jazz Pharmaceuticals plc. No subsidiary of Jazz Pharmaceuticals plc guaranteed the 2021

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certain local law restrictions on payment of dividends, among other things, and potential negative tax consequences, we are not aware of any significant restrictions on the ability of Jazz Pharmaceuticals plc to obtain funds from the Issuer or Jazz Pharmaceuticals plc's other subsidiaries by dividend or loan, or any legal or economic restrictions on the ability of the Issuer or Jazz Pharmaceuticals plc's other subsidiaries to transfer funds to Jazz Pharmaceuticals plc in the form of cash dividends, loans or advances. There is no assurance that in the future such restrictions will not be adopted.

As of June 30, 2017, the carrying value of the equity component of the 2021 Notes, net of equity issuance costs, was $126.9 million.

Maturities

Scheduled maturities with respect to our long-term debt principal balances outstanding as of June 30, 2017 were as follows (in thousands):

Year Ending December 31,	Scheduled Long-Term Debt Maturities
2017 (remainder)	$ 18,047
2018	40,606
2019	58,652
2020	76,699
2021	1,575,801
Total	$ 1,769,805

9. Commitments and Contingencies

Indemnification

In the normal course of business, we enter into agreements that contain a variety of representations and warranties and provide for general indemnification, including indemnification associated with product liability or infringement of intellectual property rights. Our exposure under these agreements is unknown because it involves future claims that may be made but have not yet been made against us. To date, we have not paid any claims or been required to defend any action related to these indemnification obligations.

We have agreed to indemnify our executive officers, directors and certain other employees for losses and costs incurred in connection with certain events or occurrences, including advancing money to cover certain costs, subject to certain limitations. The maximum potential amount of future payments we could be required to make under the indemnification obligations is unlimited; however, we maintain insurance policies that may limit our exposure and may enable us to recover a portion of any future amounts paid. Assuming the applicability of coverage and the willingness of the insurer to assume coverage, and subject to certain retention, loss limits and other policy provisions, we believe the fair value of these indemnification obligations is not significant. Accordingly, we did not recognize any liabilities relating to these obligations as of June 30, 2017 and December 31, 2016. No assurances can be given that the covering insurers will not attempt to dispute the validity, applicability, or amount of coverage without expensive litigation against these insurers, in which case we may incur substantial liabilities as a result of these indemnification obligations.

Lease and Other Commitments

We have noncancelable operating leases for our office buildings and we are obligated to make payments under noncancelable operating leases for automobiles used by our sales force. Future minimum lease payments under our noncancelable operating and facility leases as of June 30, 2017 were as follows (in thousands):

Year Ending December 31,	Lease Payments
2017 (remainder)	$ 9,245
2018	15,573

2019	13,812
2020	11,333
2021	10,724
Thereafter	74,600
Total	$ 135,287

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In January 2015, we entered into an agreement to lease office space located in Palo Alto, California in a building to be constructed by the landlord. We expect to occupy this office space by the end of 2017. In connection with this lease, the landlord is providing a tenant improvement allowance for the costs associated with the design, development and construction of tenant improvements for the leased facility. We are obligated to fund all costs incurred in excess of the tenant improvement allowance. The scope of the planned tenant improvements do not qualify as "normal tenant improvements" under the lease accounting guidance. Accordingly, for accounting purposes, we have concluded we are the deemed owner of the building during the construction period. As of June 30, 2017, we recorded project construction costs of $42.4 million incurred by the landlord as construction-in-progress in property and equipment, net and a corresponding financing obligation in other non-current liabilities in our condensed consolidated balance sheets. We will increase the asset and financing obligation as additional building costs are incurred by the landlord during the construction period. We recorded rent expense associated with the ground lease of $0.5 million and $1.0 million in the three and six months ended June 30, 2017, respectively, in our condensed consolidated statements of income.

As of June 30, 2017, we had $31.4 million of noncancelable purchase commitments due within one year, primarily related to agreements with third party manufacturers.

Legal Proceedings

We are involved in legal proceedings, including the following matters:

Xyrem ANDA Matters Relating to the First ANDA Filer. On October 18, 2010, we received a notice of Paragraph IV Patent Certification, or Paragraph IV Certification, from West-Ward that it had submitted an ANDA to the FDA requesting approval to market a generic version of Xyrem. West-Ward's initial notice alleged that three patents then listed for Xyrem in the Orange Book on the date of the notice are invalid, unenforceable or not infringed by West-Ward's proposed generic product. On November 22, 2010, we filed a lawsuit against West-Ward in response to West-Ward's initial notice in the District Court, in which we sought a permanent injunction to prevent West-Ward from introducing a generic version of Xyrem that would infringe our patents. Additional patents covering Xyrem have been issued both before and since December 2010, and after receiving Paragraph IV Certification notices from West-Ward with respect to those patents, we filed additional lawsuits against West-Ward to include these additional patents in the litigation.

On April 5, 2017, we entered into a settlement agreement and related agreements resolving our patent infringement litigation against West-Ward in the District Court. On April 10, 2017, the District Court approved an order dismissing the litigation. We have released West-Ward from all claims asserting that patents covering Xyrem are or would be infringed by the West-Ward ANDA, and West-Ward has released us from all claims asserting that the patents covering Xyrem are unenforceable, unpatentable, invalid or not infringed by the generic version of Xyrem covered by West-Ward's ANDA. In accordance with legal requirements, we and West-Ward have submitted the settlement agreement to the U.S. Federal Trade Commission and the U.S. Department of Justice for review. For more information regarding the settlement agreement with West-Ward, see "Overview—Significant Developments Affecting Our Business" in Part I, Item 2 of this Quarterly Report on Form 10-Q.

Xyrem ANDA Matters Relating to Second Filers. On December 10, 2012, we received notice of Paragraph IV Certification from Amneal that it had submitted an ANDA to the FDA requesting approval to market a generic version of Xyrem. On January 18, 2013, we filed a lawsuit against Amneal in the District Court alleging that our patents covering Xyrem are infringed or will be infringed by Amneal's ANDA and seeking a permanent injunction to prevent Amneal from introducing a generic version of Xyrem that would infringe our patents. On November 21, 2013, we received notice of Paragraph IV Certification from Par Pharmaceutical, Inc., or Par, that it had submitted an ANDA to the FDA requesting approval to market a generic version of Xyrem. On December 27, 2013, we filed a lawsuit against Par in the District Court alleging that our patents covering Xyrem are infringed or will be infringed by Par's ANDA and seeking a permanent injunction to prevent Par from introducing a generic version of Xyrem that would infringe our patents.

In April 2014, Amneal asked the District Court to consolidate its case with the Par case, stating that both cases would proceed on the schedule for the Par case. The District Court granted this request in May 2014. The order consolidating the cases extended Amneal's 30-month stay period to coincide with the date of Par's 30-month stay period. The stay

expired on May 20, 2016.

Additional patents covering Xyrem have been issued since April 2014 and have been listed in the Orange Book for Xyrem. Amneal and Par have given us additional notices of Paragraph IV Certifications regarding such patents, and we have filed additional lawsuits against Amneal and Par in the District Court alleging that our patents covering Xyrem are infringed or will be infringed by Amneal's and Par's ANDAs and seeking a permanent injunction to prevent Amneal and Par from introducing a generic version of Xyrem that would infringe our patents. In March 2016, Par moved to dismiss claims involving our patents covering a part of the Xyrem label that instructs prescribers on adjusting the dose of Xyrem when it is being co-administered with divalproex sodium (also known as valproate or valproic acid), or our DDI patents. In August 2016, we and

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Par stipulated to dismiss claims relating to our patents covering the formulation of Xyrem on the grounds that Par had notified FDA that it had converted its Paragraph IV Certifications to a Paragraph III Certification.

On June 4, 2014, we received a notice of Paragraph IV Certification from Ohm that it had submitted an ANDA to the FDA requesting approval to market a generic version of Xyrem. On July 15, 2014, we filed a lawsuit against Ohm in the District Court alleging that our patents covering Xyrem are infringed or will be infringed by Ohm's ANDA and seeking a permanent injunction to prevent Ohm from introducing a generic version of Xyrem that would infringe our patents. Since June 2014, we have received additional notices of Paragraph IV Certification from Ohm regarding newly issued patents for Xyrem listed in the Orange Book, and we have filed additional lawsuits against Ohm in the District Court alleging that our patents covering Xyrem are infringed or will be infringed by Ohm's ANDA and seeking a permanent injunction to prevent Ohm from introducing a generic version of Xyrem that would infringe our patents. In May 2016, the Ohm litigation was settled as described below. In the first quarter of 2017, the FDA tentatively approved the ANDAs of Amneal and Ohm.

On October 30, 2014, we received a notice of Paragraph IV Certification from Teva Pharmaceutical Industries Ltd., formerly known as Watson Laboratories, Inc., or Teva, that it had submitted an ANDA to the FDA requesting approval to market a generic version of Xyrem. On December 11, 2014, we filed a lawsuit against Teva in the District Court alleging that our patents covering Xyrem are or will be infringed by Teva's ANDA and seeking a permanent injunction to prevent Teva from introducing a generic version of Xyrem that would infringe our patents. In March 2015, Teva moved to dismiss the portion of the case based on our Orange Book-listed REMS patents on the grounds that these patents do not cover patentable subject matter. In November 2015, the District Court administratively terminated this motion to dismiss (without prejudice) pending the outcome of IPR proceedings before the PTAB relating to the patents that were the subject of Teva's motion. Since March 2015, we have received an additional notice of Paragraph IV Certification from Teva regarding newly issued patents for Xyrem listed in the Orange Book, and we have filed an additional lawsuit against Teva in the District Court alleging that our patents covering Xyrem are or will be infringed by Teva's ANDA and seeking a permanent injunction to prevent Teva from introducing a generic version of Xyrem that would infringe these patents.

In April 2015, the District Court issued an order that consolidated all then-pending lawsuits against Amneal, Par, Ohm and Teva into one case.

On June 8, 2015, we received a Paragraph IV Certification from Wockhardt Bio AG, or Wockhardt, that it had submitted an ANDA to the FDA requesting approval to market a generic version of Xyrem. On July 17, 2015, we filed a lawsuit in the District Court alleging that our patents covering Xyrem were or would be infringed by Wockhardt's ANDA and seeking a permanent injunction to prevent Wockhardt from introducing a generic version of Xyrem that would infringe our patents. On November 26, 2015, we received an additional notice of Paragraph IV Certification from Wockhardt regarding newly issued patents listed in the Orange Book, and we filed an additional lawsuit against Wockhardt in the District Court alleging that our patents covering Xyrem were or would be infringed by Wockhardt's ANDA and seeking a permanent injunction to prevent Wockhardt from introducing a generic version of Xyrem that would infringe these patents. In April 2016, the Wockhardt litigation was settled as set forth below.

On July 23, 2015, we received a Paragraph IV Certification from Lupin Inc., or Lupin, that it had submitted an ANDA to the FDA requesting approval to market a generic version of Xyrem. On September 2, 2015, we filed a lawsuit in the District Court alleging that our patents covering Xyrem are or will be infringed by Lupin's ANDA and seeking a permanent injunction to prevent Lupin from introducing a generic version of Xyrem that would infringe our patents.

In January, April and June 2016, the District Court issued orders consolidating all of the cases then pending against Amneal, Par, Ohm, Teva, Wockhardt and Lupin into a single case for all purposes. No trial date has been set in that consolidated case.

Additional patents covering Xyrem have been issued since June 2016 and have been listed in the Orange Book for Xyrem. We have received additional Paragraph IV notices from Amneal regarding such patents and have filed new lawsuits in the District Court, alleging that our additional patents covering Xyrem are or will be infringed by Amneal's ANDA and seeking a permanent injunction to prevent Amneal from introducing a generic version of Xyrem that would infringe our patents.

On June 14, 2017, we received a notice of Paragraph IV Certification from Ascent that it had submitted an ANDA to the FDA requesting approval to market a generic version of Xyrem. On July 27, 2017, we filed lawsuits against Ascent in the District Court as well as in the EDNY, where Ascent is incorporated, alleging that our patents covering Xyrem are infringed or will be infringed by Ascent's ANDA and seeking a permanent injunction to prevent Ascent from introducing a generic version of Xyrem that would infringe our patents.

We entered into settlement agreements with Wockhardt and Ohm on April 18, 2016 and May 9, 2016, respectively, that resolved our patent litigation against Wockhardt and Ohm. Under the settlement agreements, we granted each of Wockhardt and Ohm a license to manufacture, market, and sell its generic version of Xyrem on or after December 31, 2025, or earlier depending on the occurrence of certain events. The specific terms of the settlement agreements are confidential.

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The settlements with Wockhardt and Ohm do not resolve the lawsuits against Amneal, Par, Teva, Lupin and Ascent, which are ongoing. We cannot predict the specific timing or outcome of events in these matters with respect to the remaining defendants or the impact of developments involving any specific parties or patents on other ongoing proceedings with any ANDA filer.

Xyrem Post-Grant Patent Review Matters. In January 2015, certain of the ANDA filers filed petitions for IPR with respect to the validity of the six REMS patents. In July 2016, the PTAB issued final decisions that the claims of these six patents are unpatentable; as a result, if the United States Court of Appeals for the Federal Circuit upholds those decisions on appeal, these claims will be canceled. We have filed notices of appeal with respect to these IPR decisions to the United States Court of Appeals for the Federal Circuit. In September 2015, certain of the ANDA filers filed a petition for IPR with respect to the validity of an additional REMS patent. In March 2016, the PTAB partially instituted an IPR on three claims of a seventh REMS patent, declining to review 25 of 28 claims. In March 2017, the PTAB issued a final decision that the three claims that were reviewed by the PTAB are unpatentable. We filed a notice of appeal of that decision on May 18, 2017, and the Court of Appeals for the Federal Circuit has consolidated the appeal of the March 2017 decision with the pending appeals of the July 2016 decisions.

We cannot predict whether additional post-grant patent review challenges will be filed by any of the ANDA filers or any other entity, the outcome of any pending IPR or other proceeding, the outcome of any appeal of the July 2016 IPR decisions with respect to the six REMS patents or the impact any IPR or other proceeding might have on ongoing ANDA litigation proceedings or other aspects of our Xyrem business.

Shareholder Litigation Matters Relating to Celator Acquisition. On June 21, 2016, a putative class-action lawsuit challenging our Celator Acquisition, captioned Dunbar v. Celator Pharmaceuticals, Inc., or the Dunbar action, was filed in the Superior Court of New Jersey. We refer to our acquisition of Celator in this report as the Celator Acquisition. The complaint was filed against Celator, each member of the Celator board of directors, Jazz Pharmaceuticals plc and our wholly owned subsidiary Plex Merger Sub, Inc., or Plex. The complaint generally alleges that the Celator directors breached their fiduciary duties in connection with the Celator Acquisition, and that Jazz Pharmaceuticals plc and Plex aided and abetted these alleged breaches of fiduciary duty. The complaint also generally asserts that the Celator directors breached their fiduciary duties to Celator's public stockholders by, among other things, (i) agreeing to sell Celator to us at an inadequate price, (ii) implementing an unfair process, (iii) agreeing to certain provisions of the merger agreement for the Celator Acquisition that allegedly favored us and deterred alternative bids, and (iv) failing to disclose purportedly material information in Celator's Schedule 14D-9 filing with the U.S. Securities and Exchange Commission, or SEC. The plaintiff sought, among other things, an injunction against the consummation of the Celator Acquisition and an award of costs and expenses, including a reasonable allowance for attorneys' and experts' fees.

Between June 27, 2016 and June 29, 2016, two putative class-action lawsuits challenging the Celator Acquisition, captioned Palmisciano v. Celator Pharmaceuticals, Inc., or the Palmisciano action, and Barreto v. Celator Pharmaceuticals, Inc., or the Barreto action, were filed in the District Court. The complaints were filed against Celator and each member of the Celator board of directors. The complaints assert causes of action under sections 14 and 20 of the Securities Exchange Act of 1934, as amended, predicated on Celator's and the Celator directors' alleged failure to disclose purportedly material information in Celator's Schedule 14D-9 filing with the SEC. The plaintiffs sought, among other things, an injunction against the consummation of the Celator Acquisition and an award of costs and expenses, including a reasonable allowance for attorneys' and experts' fees. Neither Jazz Pharmaceuticals plc nor Plex were named defendants in these actions.

On July 6, 2016, the defendants to the Dunbar action, the Palmisciano action and the Barreto action entered into a memorandum of understanding, or MOU, regarding settlement of these actions with the plaintiffs. The MOU outlines the terms of the parties' agreement in principle to settle and release all claims which were or could have been asserted in these actions. In consideration for such settlement and release, the parties to these actions agreed, among other things, that Celator would amend its Schedule 14D-9 to include certain supplemental disclosures. The Schedule 14D-9 was amended by Celator on July 6, 2016, and the Celator Acquisition was completed on July 12, 2016. The settlement remains subject to, among other items, confirmatory discovery, the execution of a stipulation of settlement by the

parties, final approval of the settlement by the District Court in the Barreto action and dismissal with prejudice of the Dunbar action and the Palmisciano action.

From time to time we are involved in legal proceedings arising in the ordinary course of business. We believe there is no other litigation pending that could have, individually or in the aggregate, a material adverse effect on our results of operations or financial condition.

Other Contingencies

In May 2016, we received a subpoena from the U.S. Attorney's Office for the District of Massachusetts requesting documents related to our support of 501(c)(3) organizations that provide financial assistance to Medicare patients, and, for Xyrem, documents concerning the provision of financial assistance to Medicare patients. In October 2016, we received a

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second subpoena updating and further specifying document requests regarding support to 501(c)(3) organizations that provide financial assistance to Medicare patients and the provision of financial assistance for Medicare patients taking drugs sold by us. In February 2017, we received a third subpoena requesting documents regarding our support to a specific 501(c)(3) organization that established a fund for narcolepsy patients in January 2017. Other companies have disclosed similar subpoenas and continuing inquiries. We are cooperating with this investigation. We are unable to predict how long this investigation will continue, whether we will receive additional subpoenas in connection with this investigation, or its outcome, but we expect that we will continue to incur significant costs in connection with the investigation, regardless of the outcome. Any settlement with the U.S. Attorney's Office could result in substantial payments and entry into a corporate integrity agreement, which would impose costs and burdens on the operation of our business. For more information, see the risk factor under the heading "We are subject to significant ongoing regulatory obligations and oversight, which may result in significant additional expense and limit our ability to commercialize our products" in Part II, Item 1A of this Quarterly Report on Form 10-Q.

10. Shareholders' Equity

The following tables present a reconciliation of our beginning and ending balances in shareholders' equity for the six months ended June 30, 2017 and 2016 (in thousands):

	Total Shareholders' Equity
Shareholders' equity at January 1, 2017	$ 1,877,339
Issuance of ordinary shares in conjunction with employee equity incentive and purchase plans	19,071
Employee withholding taxes related to share-based awards	(16,320)
Share-based compensation	52,602
Shares repurchased	(30,859)
Other comprehensive income	107,084
Net income	192,115
Shareholders' equity at June 30, 2017	$ 2,201,032

	Total Shareholders' Equity
Shareholders' equity at January 1, 2016	$ 1,706,333
Issuance of ordinary shares in conjunction with employee equity incentive and purchase plans	14,611
Employee withholding taxes related to share-based awards	(14,278)
Share-based compensation	50,333
Shares repurchased	(163,244)
Other comprehensive income	17,484
Net income	190,314
Shareholders' equity at June 30, 2016	$ 1,801,553

Share Repurchase Program

In November 2016, our board of directors authorized a new share repurchase program pursuant to which we are authorized to repurchase a number of ordinary shares having an aggregate purchase price of up to $300.0 million, exclusive of any brokerage commissions. In the six months ended June 30, 2017, we spent a total of $30.9 million to

purchase 0.2 million of our ordinary shares under the share repurchase program at an average total purchase price, including commissions, of $134.10 per share. As of June 30, 2017, the remaining amount authorized under the share repurchase program was $250.7 million.

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Accumulated Other Comprehensive Loss

The components of accumulated other comprehensive loss as of June 30, 2017 and December 31, 2016 were as follows (in thousands):

	Net Unrealized Losses From Hedging Activities	Foreign Currency Translation Adjustments	Total Accumulated Other Comprehensive Loss
Balance at December 31, 2016	$ —	$ (317,333)	$ (317,333)
Other comprehensive income (loss)	(1,348)	108,432	107,084
Balance at June 30, 2017	$ (1,348)	$ (208,901)	$ (210,249)

During the six months ended June 30, 2017, other comprehensive income (loss) reflects foreign currency translation adjustments, primarily due to the strengthening of the euro against the U.S. dollar, and the net unrealized losses on derivatives that qualify as cash flow hedges.

11. Segment and Other Information

Our operating segment is reported in a manner consistent with the internal reporting provided to the chief operating decision maker, or CODM. Our CODM has been identified as our chief executive officer. We have determined that we operate in one business segment, which is the identification, development and commercialization of meaningful pharmaceutical products that address unmet medical needs. The following table presents a summary of total revenues (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Xyrem	$298,026	$280,968	$570,352	$530,505
Erwinaze/Erwinase	49,024	49,748	100,412	100,921
Defitelio/defibrotide	30,238	33,246	66,138	51,143
Prialt® (ziconotide) intrathecal infusion	5,656	8,073	13,373	14,282
Other	6,711	7,075	13,058	16,175
Product sales, net	389,655	379,110	763,333	713,026
Royalties and contract revenues	4,731	2,051	7,106	4,145
Total revenues	$394,386	$381,161	$770,439	$717,171

The following table presents a summary of total revenues attributed to geographic sources (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
United States	$356,687	$345,853	$695,870	$651,732
Europe	27,378	28,749	58,730	53,769
All other	10,321	6,559	15,839	11,670
Total revenues	$394,386	$381,161	$770,439	$717,171

The following table presents a summary of the percentage of total revenues from customers that represented more than 10% of our total revenues:

	Three Months Ended	Six Months Ended

	June 30,		June 30,	
	2017	2016	2017	2016
Express Scripts	75%	74%	74%	74%
McKesson	14%	15%	15%	14%

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The following table presents total long-lived assets, consisting of property and equipment, by location (in thousands):

	June 30, 2017	December 31, 2016
Ireland	$65,531	$ 62,453
United States	61,349	35,791
Italy	7,732	7,000
Other	2,014	2,246
Total long-lived assets	$136,626	$ 107,490

12. Share-Based Compensation

Share-based compensation expense related to share options, RSUs and grants under our ESPP was as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Selling, general and administrative	$20,874	$20,949	$40,679	$41,153
Research and development	4,859	3,521	9,001	6,811
Cost of product sales	1,527	963	2,773	1,652
Total share-based compensation expense, pre-tax	27,260	25,433	52,453	49,616
Income tax benefit from share-based compensation expense	(9,838)	(8,922)	(17,462)	(15,855)
Total share-based compensation expense, net of tax	$17,422	$16,511	$34,991	$33,761

Share Options

The table below shows the number of shares underlying options granted to purchase our ordinary shares, the weighted-average assumptions used in the Black-Scholes option pricing model and the resulting weighted-average grant date fair value of share options granted:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Shares underlying options granted (in thousands)	85	90	1,256	1,099
Grant date fair value	$46.29	$45.10	$42.47	$40.58
Black-Scholes option pricing model assumption information:				
Volatility	35%	37%	35%	39%
Expected term (years)	4.3	4.2	4.3	4.2
Range of risk-free rates	1.6-1.7%	1.0-1.1%	1.6-1.8%	1.0-1.5%
Expected dividend yield	—%	—%	—%	—%

Restricted Stock Units

The table below shows the number of RSUs granted covering an equal number of our ordinary shares and the weighted-average grant date fair value of RSUs granted:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
RSUs granted (in thousands)	34	35	502	436
Grant date fair value	$149.78	$145.07	$136.44	$125.22

The fair value of RSUs is determined on the date of grant based on the market price of our ordinary shares on that date. The fair value of RSUs is expensed ratably over the vesting period, generally over four years.

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As of June 30, 2017, compensation cost not yet recognized related to unvested share options and RSUs was $91.2 million and $110.1 million, respectively, which is expected to be recognized over a weighted-average period of 2.9 years and 2.8 years, respectively.

13. Income Taxes

Our income tax provision was $35.5 million and $64.7 million in the three and six months ended June 30, 2017, respectively, compared to $42.1 million and $74.5 million for the same periods in 2016. The effective tax rates were 25.1% and 25.2% in the three and six months ended June 30, 2017, respectively, compared to 26.9% and 28.1% for the same periods in 2016. The decrease in the effective tax rate for the three months ended June 30, 2017 compared to the same period in 2016 was primarily due to changes in income mix among the various jurisdictions in which we operate. The decrease in the effective tax rate for the six months ended June 30, 2017 compared to the same period in 2016 was primarily due to changes in income mix among the various jurisdictions in which we operate and tax benefit associated with share-based compensation. The effective tax rates for the three and six months ended June 30, 2017 were higher than the Irish statutory rate of 12.5% primarily due to income taxable at a rate higher than the Irish statutory rate, uncertain tax positions, and various expenses not deductible for tax purposes, partially offset by originating tax credits and deductions available in relation to subsidiary equity. We do not provide for Irish income taxes on undistributed earnings of our foreign operations that are intended to be indefinitely reinvested in our foreign subsidiaries.

Our net deferred tax liability primarily arose due to the Celator Acquisition. The balance is net of deferred tax assets which are comprised primarily of U.S. federal and state net operating loss carryforwards, foreign net operating loss carryforwards and other temporary differences. We maintain a valuation allowance against certain foreign and U.S. federal and state deferred tax assets. Each reporting period, we evaluate the need for a valuation allowance on our deferred tax assets by jurisdiction and adjust our estimates as more information becomes available.

We are required to recognize the financial statement effects of a tax position when it is more likely than not, based on the technical merits, that the position will be sustained upon examination. As a result, we have established a liability for certain tax benefits which we judge may not be sustained upon examination. Our most significant tax jurisdictions are Ireland, the U.S. (both at the federal level and in various state jurisdictions), Italy and France. Because of our net operating loss carryforwards and tax credit carryforwards, substantially all of our tax years remain open to federal, state, and foreign tax examination. Certain of our subsidiaries are currently under examination by the French tax authorities for the years ended December 31, 2012 through 2016. These examinations may lead to ordinary course adjustments or proposed adjustments to our taxes. In December 2015, we received proposed tax assessment notices from the French tax authorities for 2012 and 2013 relating to certain transfer pricing adjustments. The notices propose additional French tax of approximately $43.7 million, including interest and penalties through the date of the assessment, translated at the foreign exchange rate at June 30, 2017. We disagree with the proposed assessment and intend to contest it vigorously.

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Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion of our financial condition and results of operations should be read in conjunction with the condensed consolidated financial statements and the notes to condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q. This discussion contains forward-looking statements that involve risks and uncertainties. When reviewing the discussion below, you should keep in mind the substantial risks and uncertainties that could impact our business. In particular, we encourage you to review the risks and uncertainties described in "Risk Factors" in Part II, Item 1A in this Quarterly Report on Form 10-Q. These risks and uncertainties could cause actual results to differ materially from those projected in forward-looking statements contained in this report or implied by past results and trends. Forward-looking statements are statements that attempt to forecast or anticipate future developments in our business, financial condition or results of operations. See the "Cautionary Note Regarding Forward-Looking Statements" that appears at the end of this discussion. These statements, like all statements in this report, speak only as of the date of this Quarterly Report on Form 10-Q (unless another date is indicated), and we undertake no obligation to update or revise these statements in light of future developments.

Overview

Jazz Pharmaceuticals plc is an international biopharmaceutical company focused on improving patients' lives by identifying, developing and commercializing meaningful products that address unmet medical needs.

We have a diverse portfolio of products and product candidates, with a focus in the areas of sleep and hematology/oncology. Our lead marketed products are:

- Xyrem® (sodium oxybate) oral solution, the only product approved by the U.S. Food and Drug Administration, or FDA, and marketed in the U.S. for the treatment of both cataplexy and excessive daytime sleepiness, or EDS, in patients with narcolepsy;
- Erwinaze® (asparaginase Erwinia chrysanthemi), a treatment approved in the U.S. and in certain markets in Europe (where it is marketed as Erwinase®) for patients with acute lymphoblastic leukemia, or ALL, who have developed hypersensitivity to E. coli-derived asparaginase;
- Defitelio® (defibrotide sodium), a product approved in the U.S. for the treatment of adult and pediatric patients with hepatic veno-occlusive disease, or VOD, also known as sinusoidal obstruction syndrome, or SOS, with renal or pulmonary dysfunction following hematopoietic stem cell transplantation, or HSCT, and in Europe (where it is marketed as Defitelio® (defibrotide)) for the treatment of severe VOD in adults and children undergoing HSCT therapy; and
- Vyxeos™ (daunorubicin and cytarabine) liposome for injection, a product approved in the U.S. for the treatment of adults with newly-diagnosed therapy-related acute myeloid leukemia, or AML, or AML with myelodysplasia-related changes.

Our strategy is to create shareholder value by:

- Growing sales of the existing products in our portfolio, including by identifying and investing in growth opportunities such as new treatment indications and new geographic markets;
- Acquiring or licensing rights to clinically meaningful and differentiated products that are on the market or product candidates that are in late-stage development; and
- Pursuing targeted development of post-discovery differentiated product candidates.

We apply a disciplined approach to allocating our resources between investments in our current commercial and development portfolio and acquisitions or in-licensing of new assets.

In the three and six months ended June 30, 2017, our total net product sales increased by 3% and 7%, respectively, compared to the same periods in 2016, primarily due to an increase in Xyrem product sales. We expect total net product sales to increase in 2017 over 2016, primarily due to expected growth in sales of Xyrem and Defitelio, as well as sales of Vyxeos. Our ability to increase net product sales is subject to a number of risks and uncertainties as set forth below and under "Risk Factors" in Part II, Item 1A of this Quarterly Report on Form 10-Q. For additional information regarding our net product sales, see "—Results of Operations."

Significant Developments Affecting Our Business

FDA Approval of Vyxeos. On August 3, 2017, the FDA approved our NDA for Vyxeos for the treatment of adults with newly-diagnosed therapy-related AML or AML with myelodysplasia-related changes. We are in the process of launching Vyxeos in the U.S. Subject to the successful completion of product testing for compliance with the final specifications included in the approved NDA, we expect to begin shipping Vyxeos in August 2017.

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Settlement with West-Ward. On April 5, 2017, we entered into a settlement agreement and related agreements resolving our patent infringement litigation against West-Ward Pharmaceuticals Corp. (a wholly owned subsidiary of Hikma Pharmaceuticals PLC), which acquired Roxane Laboratories, Inc., or West-Ward, in the U.S. District Court for the District of New Jersey, or the District Court. In connection with the settlement agreement, we granted West-Ward the right to sell an authorized generic version of Xyrem, or the West-Ward AG Product, in the U.S. for an initial term of six months commencing on January 1, 2023, or earlier under certain circumstances. Such circumstances include events related to the market entry of other generic versions of Xyrem, a final decision that all unexpired claims of the Xyrem patents are invalid and/or unenforceable, and a substantial reduction in Xyrem net sales over specified periods of time. West-Ward has the right to extend the initial six month term for the West-Ward AG Product, or the Initial Term, and continue to sell the West-Ward AG Product for up to a total of five years (the Initial Term, as it may be extended by West-Ward, is referred to as the AG Sales Period). We will receive a meaningful royalty from West-Ward on net sales of the West-Ward AG Product, with the royalty rate increasing during the Initial Term based on increased net sales of the West-Ward AG Product. There will also be a substantial increase in the royalty rate should the AG Sales Period be extended beyond one year. We will also be paid for supply of the West-Ward AG Product and will be reimbursed by West-Ward for a portion of the services costs associated with the operation of the Xyrem risk evaluation and mitigation strategy, or REMS, and distribution of the West-Ward AG Product.

We also granted West-Ward a non-exclusive license under the Xyrem patents to make, have made and market its generic sodium oxybate product under the West-Ward abbreviated new drug application, or ANDA, in the U.S., effective at the end of the AG Sales Period. West-Ward has agreed that, other than in accordance with the terms and conditions of the settlement agreement and the foregoing arrangements, West-Ward will not make, use or sell a generic version of Xyrem for so long as any Xyrem patents remain in effect.

The West-Ward AG Product will be distributed through the FDA-approved Xyrem REMS. The FDA's approval of West-Ward's ANDA in January 2017 includes a waiver that permits West-Ward's ANDA product to use a separate REMS program, or the generic sodium oxybate REMS, from the Xyrem REMS. The settlement agreement permits West-Ward to develop and implement the separate REMS approved with its ANDA, and permits us to challenge the FDA's waiver decision and the separate REMS approved in connection with West-Ward's ANDA, and to raise any other safety issues pertaining to Xyrem.

For further discussion, see "—Challenges, Risks and Trends Related to Our Lead Marketed Products" below.

Other Significant Developments

Key recent developments in our research and development activities include the following:

On April 24, 2017, we announced positive top-line efficacy results from our Phase 3 clinical trial evaluating Xyrem in pediatric narcolepsy patients with cataplexy, followed by the presentation of full efficacy and safety results on June 6, 2017.

On April 26, 2017, we announced positive top-line efficacy results from our Phase 3 clinical trial evaluating JZP-110 in adult patients with excessive sleepiness, or ES, associated with narcolepsy, followed by our presentation on June 6, 2017 of full efficacy and safety results from this trial as well as from our two Phase 3 clinical trials evaluating JZP-110 in adult patients with ES associated with obstructive sleep apnea, or OSA. We also recently completed the interim data analysis in an ongoing open label extension trial evaluating the long-term safety and maintenance of efficacy of JZP-110. We believe that we have all of the clinical data necessary to support our planned new drug application, or NDA, for JZP-110 in late 2017.

Continued Emphasis on Research and Development

During the six months ended June 30, 2017, we continued our focus on research and development activities, which currently include clinical development of new product candidates, activities related to line extensions and new indications for existing products and the generation of additional clinical data for existing products, all in our sleep and hematology/oncology therapeutic areas.

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A summary of our ongoing development activities is provided below:

Project	Disease Area	Status
Sleep		
JZP-110	ES in obstructive sleep apnea, or OSA	Top-line data from two Phase 3 trials received in first quarter of 2017; full data presented in second quarter of 2017; plan to submit an NDA to the FDA in late 2017
JZP-110	ES in narcolepsy	Top-line data from Phase 3 trial received in second quarter of 2017; full data presented in second quarter of 2017; plan to submit an NDA to the FDA in late 2017
JZP-110	ES in Parkinson's disease	First patient enrolled in Phase 2 trial in first quarter of 2017
Xyrem	EDS and cataplexy in pediatric narcolepsy patients with cataplexy	Top-line data from Phase 3 trial received in second quarter of 2017; full data presented in second quarter of 2017; expect to submit a supplemental NDA, or sNDA, and pediatric written request report to the FDA in fourth quarter of 2017
JZP-507	EDS and cataplexy in narcolepsy	Expect to submit an NDA to the FDA by first quarter of 2018
JZP-258	EDS and cataplexy in narcolepsy	First patient enrolled in Phase 3 trial being conducted in the European Union, or EU, and U.S. in first quarter of 2017; subject to results of trial, expect to submit an NDA to the FDA in 2019
Oxybate once-nightly dosing	Narcolepsy	Program progressing; evaluation of deuterated oxybate and other formulation options continues as part of once-nightly development process
Hematology/Oncology		
Vyxeos	High-risk AML	NDA approved by FDA on August 3, 2017 for the treatment of adults with newly-diagnosed therapy-related AML or AML with myelodysplasia-related changes; expect to submit a marketing authorization application, or MAA, to the European Medicines Agency, or EMA, in fourth quarter of 2017
Defibrotide	Prevention of VOD in high-risk patients following HSCT	First patient enrolled in Phase 3 trial in first quarter of 2017
Defibrotide	Prevention of acute Graft versus Host Disease, or aGvHD, following HSCT	Expect to initiate Phase 2 trial in fourth quarter of 2017
Asparaginase	ALL and other hematologic disorders	Evaluation of early-stage product candidates

In the sleep therapeutic area, we have the following ongoing and planned development activities:

- JZP-110.

Phase 3 Clinical Trials. JZP-110 is a late-stage investigational compound being developed for potential treatment of ES in patients with narcolepsy and ES in patients with OSA. We acquired worldwide development, manufacturing and commercial rights to JZP-110 from Aerial BioPharma LLC, or Aerial, in January 2014, other than in certain jurisdictions in Asia where SK Biopharmaceuticals Co., Ltd, or SK, retains rights. We conducted two Phase 3 clinical trials in patients with ES associated with OSA and one Phase 3 clinical trial in patients with ES associated with narcolepsy. In the second quarter of 2017, we presented positive efficacy results along with safety results from our two Phase 3 clinical trials in patients with ES associated with OSA and one Phase 3 clinical trial in patients with ES associated with narcolepsy. In addition, we enrolled approximately 635 patients from our Phase 2 and Phase 3 clinical trials in an ongoing open label extension trial evaluating the long-term safety and maintenance of efficacy of JZP-110,

and we recently completed the interim data analysis in this trial. We believe that we have all of the clinical data necessary to support our planned submission of an NDA to the FDA in late 2017 to seek approval for JZP-110 in the treatment of ES associated with OSA and ES associated with narcolepsy.

Phase 2 Clinical Trial. We commenced patient enrollment in a Phase 2 clinical trial of JZP-110 in patients with ES associated with Parkinson's disease in the first quarter of 2017. We expect to enroll approximately 50 adult patients in this trial. There are no FDA-approved therapies for ES in Parkinson's disease in the U.S.

Other Activities. We are also evaluating future pipeline expansion opportunities for JZP-110 in other disorders and conditions, as well as opportunities for geographic expansion.

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- Xyrem.

Phase 3 Clinical Trial of Xyrem in Children and Adolescents. While in many patients narcolepsy can begin during childhood and adolescence, there has been limited information on the treatment of pediatric narcolepsy patients with Xyrem. We worked with the FDA and several leading specialists to design a clinical trial to generate additional data on the treatment of pediatric narcolepsy patients with Xyrem. In the fourth quarter of 2014, we initiated a Phase 3 clinical trial to assess the safety and efficacy of Xyrem in children and adolescents aged seven to 17 who have narcolepsy with cataplexy. In the second quarter of 2017, we presented positive efficacy results along with the safety results from this trial. We anticipate submitting an sNDA and pediatric written request report to the FDA in the fourth quarter of 2017.

- JZP-507.

JZP-507 is an investigational new drug candidate with a 50% reduction in sodium content compared to Xyrem that in a pilot study has demonstrated bioequivalence to Xyrem. We are investigating JZP-507 for the potential treatment of both narcolepsy with cataplexy and EDS in narcolepsy. We anticipate submitting an NDA to the FDA by the first quarter of 2018. We believe that JZP-507 would offer a clinically meaningful benefit to patients compared to Xyrem.

- JZP-258.

JZP-258 is an investigational new drug candidate that contains 90% less sodium than Xyrem and is being developed for the potential treatment of both narcolepsy with cataplexy and EDS in narcolepsy. We believe that JZP-258 would offer a clinically meaningful benefit to patients compared to Xyrem. We enrolled the first patient in a Phase 3 clinical trial of JZP-258 in the EU and U.S. in the first quarter of 2017, and, subject to the results of this trial, we anticipate submitting an NDA to the FDA in 2019.

We are also pursuing activities related to the potential development of once-nightly dosing options for narcolepsy patients that we believe would provide clinically meaningful improvements to patients compared to Xyrem. We are exploring formulation options, including an evaluation of deuterated oxybate.

In the hematology and oncology therapeutic area, we have the following ongoing and planned development activities:

- Vyxeos. Vyxeos has received Orphan Drug Designation by both the FDA and the European Commission, or EC, for the treatment of AML. We expect to submit an MAA for Vyxeos to the EMA in the fourth quarter of 2017.

We are also assessing the potential for approval of Vyxeos in other countries and for development of Vyxeos in indications in addition to the treatment of adults with newly-diagnosed therapy-related AML or AML with myelodysplasia-related changes.

- Defibrotide.

Phase 3 Clinical Trial. In the first quarter of 2017, we enrolled the first patient in a Phase 3 clinical trial of defibrotide to evaluate the safety and efficacy of defibrotide for the prevention of VOD in high-risk and very high-risk patients following HSCT. We expect to enroll approximately 400 patients in this global trial and, depending on the results from the interim analysis, the enrollment could increase to up to approximately 600 patients.

Planned Phase 2 Clinical Trial. We expect to initiate a Phase 2 trial to evaluate defibrotide for the prevention of aGvHD following HSCT in the fourth quarter of 2017.

Other Activities. In July 2017, we obtained regulatory approval of defibrotide in Canada and expect to commercialize the product in Canada beginning in the third quarter of 2017. We are also evaluating the potential of defibrotide in additional post-HSCT complications, as well as investigating defibrotide's potential utility in other serious, life-threatening conditions.

For 2017 and beyond, we expect that our research and development expenses will continue to increase from historical levels, particularly as we prepare for a number of anticipated regulatory submissions, initiate and undertake additional clinical trials and related development work and potentially acquire rights to additional product candidates. Our ability to continue to undertake our planned development activities, as well as the success of these activities, are subject to a number of risks and uncertainties, including the risk factors under the headings "Risks Related to Our Business" and "Risks Related to Our Industry" in Part II, Item 1A of this Quarterly Report on Form 10-Q.

Challenges, Risks and Trends Related to Our Lead Marketed Products

Xyrem. Xyrem is our largest selling product, and our financial results are significantly influenced by sales of Xyrem, which accounted for 76% and 75% of our net product sales for the three and six months ended June 30, 2017, respectively, and 75% of our net product sales for the year ended December 31, 2016. As a result, we continue to place a high priority on seeking to maintain and increase sales of Xyrem in its approved indications, while remaining focused on ensuring the safe and

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effective use of the product. We are also focusing on product development efforts relating to Xyrem, including seeking to enhance and enforce our intellectual property rights and to develop product, service and safety improvements for patients.

Our future plans assume that sales of Xyrem will increase, although our plans assume a slower rate of increase than in recent years. While Xyrem product sales grew from 2015 to 2016 and from 2014 to 2015, we cannot assure you that we can maintain sales of Xyrem at or near current levels, or that Xyrem sales will continue to grow. We have periodically increased the price of Xyrem, most recently in July 2017, and we cannot assure you that price adjustments we have taken or may take in the future will not negatively affect Xyrem sales volumes.

Our ability to maintain or increase Xyrem product sales is subject to risks and uncertainties, including those discussed in "Risk Factors" in Part II, Item 1A of this Quarterly Report on Form 10-Q, including those related to:

- the potential U.S. introduction of a generic version of Xyrem before the entry dates specified in our settlements with certain companies that had filed ANDAs with the FDA seeking approval to market a generic version of Xyrem or on terms that are different from those contemplated by the settlements, as further described below;
- the potential U.S. introduction of an alternative product to Xyrem for treating cataplexy and/or EDS in narcolepsy;
- changes to, increases in or uncertainties around regulatory restrictions, including changes to our Xyrem REMS, particularly in light of the FDA's waiver of the single shared systems REMS requirement for sodium oxybate and approval of the generic sodium oxybate REMS, as further described below;
- any increase in pricing pressure from, or restrictions on reimbursement imposed by, third party payors;
- changes in healthcare laws and policy, including changes in requirements for patient assistance programs, rebates, reimbursement and coverage by federal healthcare programs, and changes resulting from increased scrutiny on pharmaceutical pricing and REMS programs by government entities;
- operational disruptions at the Xyrem central pharmacy or any failure to comply with our REMS obligations to the satisfaction of the FDA;
- any supply or manufacturing problems, including any problems with our sole source provider of the active pharmaceutical ingredient, or API, for Xyrem;
- continued acceptance of Xyrem by physicians and patients, even in the face of negative publicity that surfaces from time to time;
- changes to our label, including new safety warnings or changes to our boxed warning, that further restrict how we market and sell Xyrem; and
- our U.S.-based sodium oxybate and Xyrem suppliers' ability to obtain sufficient quotas from the U.S. Drug Enforcement Administration, or DEA, to satisfy our needs for Xyrem.

Although Xyrem is protected by patents covering its manufacture, formulation, distribution system and method of use, eight companies have filed ANDAs with the FDA seeking approval to market a generic version of Xyrem. We filed patent lawsuits against each of these companies in the District Court and an additional lawsuit against the most recent ANDA filer, Ascent Pharmaceuticals, Inc., or Ascent, in the U.S. District Court for the Eastern District of New York, or EDNY. As described above, on April 5, 2017, we settled all lawsuits against the first ANDA filer, West-Ward, granting West-Ward the right to sell the West-Ward AG Product commencing on January 1, 2023, or earlier under certain circumstances, and granting West-Ward a license to launch its generic sodium oxybate product as early as six months thereafter. In the second quarter of 2016, we had settled lawsuits with two of the other ANDA filers, granting those filers a license to manufacture, market and sell their generic versions of Xyrem on or after December 31, 2025, or earlier depending on the occurrence of certain events. For a description of our settlement with West-Ward, see "Overview—Significant Developments Affecting Our Business" in this Part I, Item 2. Lawsuits with the remaining companies that have filed ANDAs with the FDA seeking approval to market a generic version of Xyrem (other than the lawsuits against Ascent) have been consolidated as one case and remain pending in the District Court. Although no trial date has been set, the trial in this consolidated case could occur as early as the first half of 2018. No trial dates have been set in the lawsuits against Ascent, which remain pending in the District Court and EDNY. For a description of these legal proceedings, see "Legal Proceedings" in Part II, Item 1 of this Quarterly Report on Form 10-Q. We cannot predict the timing or outcome of the ANDA litigation proceedings against the remaining non-settling ANDA filers.

In July 2016, the Patent Trial and Appeal Board, or PTAB, of the U.S. Patent and Trademark Office issued final decisions that the claims of six patents listed in the FDA's publication "Approved Drug Products with Therapeutic Equivalence Evaluations," or Orange Book, as covering the Xyrem REMS are unpatentable. We filed a notice of appeal of these decisions on February 22, 2017. If the United States Court of Appeals for the Federal Circuit upholds those decisions on appeal, these claims will be canceled, and we will not be able to enforce these patents. In March 2016, the PTAB partially instituted an inter partes review, or IPR, on three claims of a seventh REMS patent, declining to review 25 of 28 claims. The PTAB issued a final decision in March 2017 that the three claims they reviewed are unpatentable. We filed a notice of appeal of that decision on

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May 18, 2017, and the Court of Appeals for the Federal Circuit has consolidated the appeal of the March 2017 decision with the pending appeals of the July 2016 decisions. For a description of these legal proceedings, see "Legal Proceedings" in Part II, Item 1 of this Quarterly Report on Form 10-Q. We cannot predict whether additional post-grant patent review challenges will be filed by any of the ANDA filers or any other entity, the outcome of any proceeding, including any appeal, or the impact any IPR or other proceeding might have on ongoing ANDA litigation proceedings or other aspects of our Xyrem business.

In September 2016, Jazz Pharmaceuticals, Inc., our wholly owned subsidiary, submitted a Citizen Petition to the FDA requesting that, for safety reasons, the FDA refuse to approve any sodium oxybate ANDA with a proposed package insert or REMS that omits the portions of the Xyrem package insert and the Xyrem REMS that instruct prescribers on adjusting the dose of the product when it is co-administered with divalproex sodium (also known as valproate or valproic acid). On January 17, 2017, the FDA granted the Citizen Petition with respect to the Xyrem package insert. The FDA concluded that it will not approve any sodium oxybate ANDA referencing Xyrem that does not include in its package insert the portions of the currently approved Xyrem package insert related to the drug-drug interaction, or DDI, with divalproex sodium. The FDA stated that it did not need to reach the question of whether the DDI information could have been excluded from the generic sodium oxybate REMS materials because it was approving a REMS in connection with a sodium oxybate ANDA including that information. Our Xyrem patents include three method of administration patents relating to a DDI, or DDI patents, covering these instructions on the Xyrem package insert and Xyrem REMS. We cannot predict whether or when one or more of the ANDA filers may pursue a challenge to the FDA's response to the Citizen Petition or whether any such challenges would be successful. Likewise, we cannot predict whether we will be able to maintain the validity of, or will otherwise obtain a judicial determination that the generic sodium oxybate package insert or the generic sodium oxybate REMS will infringe, any of our patents or, if we prevail in proving infringement, whether a court will grant an injunction that prevents any non-settling ANDA filer or other company introducing a different sodium oxybate product from marketing its product. For a description of these matters, including risks and uncertainties related to our REMS, our REMS patents and our DDI patents, see "Legal Proceedings" in Part II, Item 1 of this Quarterly Report on Form 10-Q, and the risk factors under the headings "Risks Related to Xyrem and the Significant Impact of Xyrem Sales" and "Risks Related to Our Intellectual Property" in Part II, Item 1A of this Quarterly Report on Form 10-Q.

On January 17, 2017, the FDA announced approval of the West-Ward ANDA, and on January 19, 2017, the FDA tentatively approved two additional ANDAs for generic versions of Xyrem, one for Amneal Pharmaceuticals, LLC, or Amneal, and one for Ohm Laboratories Inc., formerly known as Ranbaxy, Inc., or Ohm. West-Ward's ANDA approval includes a waiver that permits West-Ward to use the generic sodium oxybate REMS on the condition that the generic sodium oxybate REMS be open to all future sponsors of ANDAs or NDAs for sodium oxybate products. We were not involved in the development of the generic sodium oxybate REMS. We continue to evaluate potential challenges based on the FDA's waiver of the requirement for a single, shared system REMS in connection with the approvals of the ANDAs, including whether the FDA's waiver decision meets the conditions for such a waiver under applicable law. We cannot predict whether or when we may pursue any such challenges or whether any such challenges would be successful.

In connection with FDA approval of the current Xyrem REMS in February 2015, the FDA indicated that it intends to evaluate the Xyrem REMS on an ongoing basis and will require modifications as may be appropriate. We cannot predict whether the FDA will request, seek to require or ultimately require modifications to, or impose additional requirements on, the Xyrem REMS in connection with the anticipated distribution of the West-Ward AG Product, the approval of the generic sodium oxybate REMS or otherwise, or the potential timing, terms or propriety thereof. Any such modifications or additional requirements could make it more difficult or expensive for us to distribute Xyrem, make distribution easier for sodium oxybate competitors, impair the safety profile of Xyrem and/or negatively affect sales of Xyrem. We also may face pressure to license or share intellectual property pertinent to the Xyrem REMS, including proprietary data required for safe distribution of sodium oxybate, in connection with the FDA's approval of the generic sodium oxybate REMS. We cannot predict the outcome or impact on our business of any future action that we may take with respect to the approval of the generic sodium oxybate REMS, or licensing or sharing intellectual

property pertinent to the Xyrem REMS or elements of the Xyrem REMS.

The actual timing of any commercial launch of an authorized generic or generic version of Xyrem is uncertain. We do not believe a launch by an ANDA filer is likely to occur prior to either a date agreed in a settlement agreement between us and such ANDA filer or a decision by the District Court, or an appellate court, if applicable, in our ongoing patent litigation. However, notwithstanding our patents, and settlement agreements licensing those patents as of future dates, it is possible that West-Ward, Amneal, Ohm or any other company that receives FDA approval of an ANDA for a generic version of Xyrem or an NDA for another sodium oxybate product could introduce a generic version of Xyrem or other sodium oxybate product before the entry dates specified in our settlement agreements or before our patents expire, including if it is determined that the introduction of the competing product does not infringe our patents, if it is determined that our patents are invalid or unenforceable, or if a non-settling ANDA filer that has received approval for its product decides, before applicable ongoing patent litigation is concluded, to launch a sodium oxybate product at risk of being held liable for damages for patent infringement. In addition, even if we prevail in our ongoing litigation at trial or on appeal, we cannot guarantee that the court will grant an injunction that prevents the ANDA filers from marketing their generic versions of Xyrem. Instead the court may

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order an ANDA filer that is found to infringe to pay damages in the form of lost profits or a reasonable royalty, which could be significant. We expect that the launch of any generic version of Xyrem, including the West-Ward AG Product or other authorized generic version of Xyrem, or the approval and launch of other products that compete with Xyrem, could have a material adverse effect on our sales of Xyrem and on our business, financial condition, results of operations and growth prospects. For further discussion regarding the risks associated with the West-Ward settlement agreement, the tentative approval of the Amneal and Ohm ANDAs, potential approval or tentative approval of additional ANDAs, the potential launch of a generic version of Xyrem, or the approval and launch of other sodium oxybate or other products that compete with Xyrem, see "Legal Proceedings" in Part II, Item 1 of this Quarterly Report on Form 10-Q and the risk factors under the headings "Risks Related to Xyrem and the Significant Impact of Xyrem Sales," "We face substantial competition from other companies, including companies with greater resources, including larger sales organizations and more experience working with large and diverse product portfolios, than we have," and "Risks Related to Our Intellectual Property" in Part II, Item 1A of this Quarterly Report on Form 10-Q.

Erwinaze/Erwinase. Sales of our second largest product, Erwinaze/Erwinase (which we refer to in this report as Erwinaze unless otherwise indicated or the context otherwise requires), accounted for 13% of our net product sales for the three and six months ended June 30, 2017 and 14% for the year ended December 31, 2016. We seek to maintain and increase sales of Erwinaze, as well as to make Erwinaze more widely available, through ongoing sales and marketing and research and development activities.

However, a significant challenge to our ability to maintain current sales levels and to increase sales is our extremely limited inventory of Erwinaze, past and continuing supply disruptions and our need to minimize or avoid additional supply disruptions due to capacity constraints, production delays, quality or regulatory challenges and other manufacturing difficulties. Erwinaze is licensed from and manufactured by a single source, Porton Biopharma Limited, or PBL.

In January 2017, the FDA issued a warning letter to PBL indicating that it was not satisfied with PBL's responses to the FDA Form 483 issued to PBL in March 2016, citing significant violations of the FDA's current Good Manufacturing Practices, or cGMP, for finished pharmaceuticals and significant deviations from cGMP for APIs. In March 2017, PBL filed a response to the warning letter with the FDA. We expect to attend a meeting with PBL and the FDA in the third quarter of 2017 to discuss the warning letter. We cannot predict whether the FDA's required remediation activities will further strain manufacturing capacity and adversely affect Erwinaze supply, particularly in light of our extremely limited product inventory. We also cannot predict if or when PBL will correct the violations and deviations to the satisfaction of the FDA or whether the FDA will be satisfied with PBL's response to the warning letter. Any failure to do so could result in the FDA refusing admission of Erwinaze in the U.S., as well as additional enforcement actions by the FDA and other regulatory entities. Any of these actions could have a material adverse effect on our sales of, and revenues from, Erwinaze and limit our potential future maintenance and growth of the market for this product.

Moreover, the current manufacturing capacity for Erwinaze is completely absorbed by demand for the product. We are working with PBL to evaluate potential expansion of its production capacity to increase the supply of Erwinaze over the longer term and to address the production delays and quality challenges, and related regulatory scrutiny. As a consequence of constrained manufacturing capacity, we have had an extremely limited or no ability to build product inventory levels that can be used to absorb disruptions to supply resulting from quality, regulatory or other issues. We have experienced product quality, manufacturing and inventory challenges that have resulted, and may continue to result, in disruptions in our ability to supply certain markets, from time to time and have caused, and may in the future cause, us to implement batch-specific, modified product use instructions. Most recently, we experienced supply disruptions in the second quarter of 2017 in the U.S. and certain other countries, and we expect additional supply disruptions of Erwinaze in the U.S. and other countries in 2017. As capacity constraints and supply disruptions continue, whether as a result of continued quality or other manufacturing issues, regulatory issues or otherwise, we will be unable to build a desired excess level of product inventory, our ability to supply the market may continue to be compromised and physicians' decisions to use Erwinaze have been, and in the future may continue to be, negatively impacted. Additional Erwinaze supply disruptions and/or our inability to expand production capacity could materially

adversely affect our sales of and revenues from Erwinaze and our potential future maintenance and growth of the market for this product, as further discussed in "Risk Factors" in Part I, Item 1A of this Quarterly Report on Form 10-Q.

Defitelio/defibrotide. Sales of Defitelio/defibrotide were 8% and 9% of our net product sales for the three and six months ended June 30, 2017, respectively, and 7% of our net product sales for the year ended December 31, 2016. We began to commercialize Defitelio in certain European countries in 2014. On March 30, 2016, the FDA approved our NDA for Defitelio for the treatment of adult and pediatric patients with VOD with renal or pulmonary dysfunction following HSCT. We launched Defitelio in the U.S. shortly after FDA approval, and our U.S. commercial launch is still at an early stage.

Our ability to realize the anticipated benefits from our investment in Defitelio is subject to risks and uncertainties, including the risk factors set forth under the heading "Risks Related to Our Business" in Item II, Part 1A of this Quarterly Report on Form 10-Q. If sales of Defitelio do not reach the levels we expect, our anticipated revenue from the product will be

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negatively affected, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

Other Challenges and Risks

Vyxeos. On August 3, 2017, the FDA approved our NDA for Vyxeos for the treatment of adults with newly-diagnosed therapy-related AML or AML with myelodysplasia-related changes. We are in the process of launching Vyxeos in the U.S. Commercial launch remains subject to the successful completion of product testing for compliance with the final specifications included in the approved NDA. In the event that our manufactured product does not comply with these specifications, our launch of Vyxeos would be delayed, which could have a material adverse effect on our business and results of operations.

Our ability to realize the anticipated benefits from our investment in Vyxeos is subject to additional risks and uncertainties, including the risk factors set forth under the heading “Risks Related to Our Business” in Item II, Part 1A of this Quarterly Report on Form 10-Q. If sales of Vyxeos do not reach the levels we expect, or we are unable to obtain regulatory approval for Vyxeos in Europe in a timely manner, or at all, our anticipated revenue from the product will be negatively affected, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

Other. We anticipate that we will continue to face a number of other challenges and risks to our business and our ability to execute our strategy in 2017 and beyond. Some of these challenges and risks are specific to our business, and others are common to companies in the pharmaceutical industry with development and commercial operations. Drug pricing by pharmaceutical companies is currently, and is expected to continue to be, under close scrutiny, including with respect to companies that have increased the price of products after acquiring those products from other companies. Both the U.S. House of Representatives and the U.S. Senate have conducted several hearings with respect to pharmaceutical drug pricing practices, including in connection with the investigation of specific price increases by several pharmaceutical companies. Moreover, the Federal Trade Commission, or FTC, has been paying increasing attention to the use of REMS by companies selling branded products, in particular as to whether a REMS may be deliberately being used to reduce the risk of competition from generic drugs in a way that may be deemed to be anticompetitive. The FDA has recently stated that it will seek to coordinate with the FTC in identifying and publicizing practices the FTC finds to be anticompetitive and has further stated that the FDA has concerns related to the role of REMS programs in delaying approval of generic products. If we become the subject of any government investigation with respect to our drug pricing or other business practices, including as they relate to the Xyrem REMS, we could incur significant expense and could be distracted from operation of our business and execution of our strategy.

In May and October 2016 and in February 2017, we received subpoenas from the U.S. Attorney’s Office for the District of Massachusetts requesting documents related to our support of 501(c)(3) organizations that provide financial assistance to Medicare patients and documents concerning the provision of financial assistance to Medicare patients taking drugs sold by us. The Office of the Inspector General has established guidelines that permit pharmaceutical manufacturers to make donations to charitable organizations who provide co-pay assistance to Medicare patients, provided that such organizations, among other things, are bona fide charities, are entirely independent of and not controlled by the manufacturer, provide aid to applicants on a first-come basis according to consistent financial criteria, and do not link aid to use of a donor’s product. If we or our vendors or donation recipients are deemed to fail to comply with relevant laws, regulations or evolving government guidance in the operation of these programs, we could be subject to damages, fines, penalties or other criminal, civil or administrative sanctions or enforcement actions. For more information, see the risk factors under the headings “Changes in healthcare law and implementing regulations, including those based on recently enacted legislation, as well as changes in healthcare policy, may impact our business in ways that we cannot currently predict, and these changes could have a material adverse effect on our business and financial condition” and “We are subject to significant ongoing regulatory obligations and oversight, which may result in significant additional expense and limit our ability to commercialize our products” in Part II, Item 1A of this Quarterly Report on Form 10-Q.

Other key challenges and risks that we face include risks and uncertainties related to:

- the challenges of protecting and enhancing our intellectual property rights;
- the challenges of achieving and maintaining commercial success of our products;
- delays or problems in the supply or manufacture of our products and product candidates, particularly with respect to certain products as to which we maintain limited inventories, our dependence on single source suppliers for most of our products, product candidates and APIs, and the requirement that we and our product suppliers be qualified by the FDA to manufacture product and comply with applicable manufacturing regulations;
- the need to obtain and maintain appropriate pricing and reimbursement for our products in an increasingly challenging environment due to, among other things, the attention being paid to healthcare cost containment and

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pharmaceutical pricing in the U.S. and worldwide, including the need to obtain and maintain reimbursement for Xyrem in the U.S. in an environment in which we are subject to increasingly restrictive conditions for reimbursement required by government programs and third party payors;

- our ability to identify and acquire, in-license or develop additional products or product candidates to grow our business;
- the challenges of compliance with the requirements of the FDA, the DEA and comparable non-U.S. regulatory agencies, including with respect to product labeling, requirements for distribution, obtaining sufficient DEA quotas where needed, marketing and promotional activities, patient assistance programs, adverse event reporting and product recalls or withdrawals;
- the difficulty and uncertainty of pharmaceutical product development, including the timing thereof, and the uncertainty of clinical success, such as the risk that results from preclinical studies and/or early clinical trials may not be predictive of results obtained in later and larger clinical trials planned or anticipated to be conducted for our product candidates;
- the inherent uncertainty associated with the regulatory approval process, especially as we continue to increase investment in our product pipeline development projects and undertake multiple planned NDA submissions for our product candidates;
- the risks associated with business combination or product or product candidate acquisition transactions, such as the challenges inherent in the integration of acquired businesses with our historical business, the increase in geographic dispersion among our centers of operation and the risks that we may acquire unanticipated liabilities along with acquired businesses or otherwise fail to realize the anticipated benefits (commercial or otherwise) from such transactions; and
- possible restrictions on our ability and flexibility to pursue certain future opportunities as a result of our substantial outstanding debt obligations.

Any of these risks and uncertainties could have a material adverse effect on our business, financial condition, results of operations and growth prospects. All of these risks are discussed in greater detail, along with other risks, in “Risk Factors” in Part II, Item 1A of this Quarterly Report on Form 10-Q.

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Results of Operations

The following table presents our revenues and expenses (in thousands, except percentages):

	Three Months Ended June 30,		Increase/		Six Months Ended June 30,		Increase/	
	2017	2016	(Decrease)		2017	2016	(Decrease)	
Product sales, net	$389,655	$379,110	3	%	$763,333	$713,026	7	%
Royalties and contract revenues	4,731	2,051	131	%	7,106	4,145	71	%
Cost of product sales (excluding amortization of intangible assets)	28,672	23,980	20	%	53,737	47,419	13	%
Selling, general and administrative	132,328	122,618	8	%	276,583	251,383	10	%
Research and development	40,157	39,091	3	%	85,085	70,343	21	%
Acquired in-process research and development	2,000	—	N/A(1)		2,000	8,750	(77	)%
Intangible asset amortization	26,186	26,737	(2	)%	51,851	49,379	5	%
Interest expense, net	18,294	12,121	51	%	37,138	24,313	53	%
Foreign exchange loss	5,427	—	N/A(1)		6,891	819	741	%
Income tax provision	35,515	42,112	(16	)%	64,675	74,451	(13	)%
Equity in loss of investee	203	—	N/A(1)		364	—	N/A(1)	

(1) Comparison to prior period not meaningful.

Revenues

The following table presents our product sales, royalties and contract revenues, and total revenues (in thousands, except percentages):

	Three Months Ended June 30,		Increase/		Six Months Ended June 30,		Increase/	
	2017	2016	(Decrease)		2017	2016	(Decrease)	
Xyrem	$298,026	$280,968	6	%	$570,352	$530,505	8	%
Erwinaze/Erwinase	49,024	49,748	(1	)%	100,412	100,921	(1	)%
Defitelio/defibrotide	30,238	33,246	(9	)%	66,138	51,143	29	%
Prialt® (ziconotide) intrathecal infusion	5,656	8,073	(30	)%	13,373	14,282	(6	)%
Other	6,711	7,075	(5	)%	13,058	16,175	(19	)%
Product sales, net	389,655	379,110	3	%	763,333	713,026	7	%
Royalties and contract revenues	4,731	2,051	131	%	7,106	4,145	71	%
Total revenues	$394,386	$381,161	3	%	$770,439	$717,171	7	%

Product Sales, Net

Xyrem product sales increased in the three and six months ended June 30, 2017 compared to the same periods in 2016, primarily due to a higher average net selling price and, to a lesser extent, an increase in sales volume. A price increase was instituted in January 2017. Erwinaze product sales in the three and six months ended June 30, 2017 decreased slightly compared to product sales for the same periods in 2016 primarily due to lower sales volume, partially offset by a change in payer mix. The Erwinaze sales volume decrease was primarily driven by the impact of continuing supply challenges which disrupted our ability to supply certain markets. Defitelio/defibrotide product sales decreased in the three months ended June 30, 2017 compared to the same period in 2016, primarily due to inventory stocking in 2016 following the launch of Defitelio in the U.S. and the impact of foreign exchange rates. Defitelio/defibrotide product sales increased in the six months ended June 30, 2017 compared to the same period in 2016, primarily due to the launch of Defitelio in the U.S. in April 2016 and, to a lesser extent, higher net sales outside the U.S. primarily due to higher sales volume. Prialt product sales decreased in the three months ended June 30, 2017 compared to the same period in 2016 primarily due to a decrease in sales volume. Prialt product sales for the six

months ended June 30, 2017 decreased slightly compared to the same period in 2016. Other product sales decreased in the three and six months ended June 30, 2017 compared to the same periods in 2016 primarily due to a

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decrease in sales of our psychiatry products due to generic competition. We expect total product sales will increase in 2017 over 2016, primarily due to anticipated growth in sales of Xyrem and Defitelio, as well as sales of Vyxeos.

Royalties and Contract Revenues

Royalties and contract revenues increased in the three and six months ended June 30, 2017 compared to the same periods in 2016 primarily due to higher contract revenues from out-licensing agreements. We expect royalties and contract revenues in 2017 to increase compared to 2016 primarily due to higher contract revenues from out-licensing agreements.

Cost of Product Sales

Cost of product sales increased in the three and six months ended June 30, 2017 compared to the same periods in 2016, primarily due to an increase in net product sales. Gross margin as a percentage of net product sales was 92.6% and 93.0% in the three and six months ended June 30, 2017, respectively, compared to 93.7% and 93.3% for the same periods in 2016. The decrease in the gross margin percentage in the three and six months ended June 30, 2017 was primarily due to a change in product mix. We expect that our gross margin as a percentage of net product sales will not change materially in 2017 compared to 2016.

Selling, General and Administrative Expenses

Selling, general and administrative expenses increased in the three months ended June 30, 2017 compared to the same period in 2016, primarily due to an increase in compensation-related expenses of $6.4 million driven by higher headcount and other expenses related to the expansion of our business, costs relating to our narcolepsy disease awareness campaign and expenses related to preparations for the U.S. launch of Vyxeos. Selling, general and administrative expenses increased in the six months ended June 30, 2017 compared to the same period in 2016, primarily due to an increase in compensation-related expenses of $14.5 million driven by higher headcount and other expenses related to the expansion of our business, costs relating to our narcolepsy disease awareness campaign, expenses related to preparations for the U.S. launch of Vyxeos and an increase in legal fees and expenses. We expect selling, general and administrative expenses in 2017 to increase compared to 2016, primarily due to an increase in compensation-related expenses driven by higher headcount and other expenses related to the expansion and support of our business and increases in expenses related to the U.S. launch of Vyxeos and our narcolepsy disease awareness campaign.

Research and Development Expenses

Research and development expenses consist primarily of costs related to clinical studies and outside services, personnel expenses and other research and development costs. Clinical study and outside services costs relate primarily to services performed by clinical research organizations, materials and supplies, and other third party fees. Personnel expenses relate primarily to salaries, benefits and share-based compensation. Other research and development expenses primarily include overhead allocations consisting of various support and facilities-related costs. We do not track fully-burdened research and development expenses on a project-by-project basis. We manage our research and development expenses by identifying the research and development activities that we anticipate will be performed during a given period and then prioritizing efforts based on our assessment of which development activities are important to our business and have a reasonable probability of success, and by dynamically allocating resources accordingly. We also continually review our development pipeline projects and the status of their development and, as necessary, reallocate resources among our development pipeline projects that we believe will best support the future growth of our business.

The following table provides a breakout of our research and development expenses by major categories of expense (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Clinical studies and outside services	$18,757	$25,302	$41,688	$43,858

Personnel expenses	15,899	10,999	32,554	21,227
Other	5,501	2,790	10,843	5,258
Total	$40,157	$39,091	$85,085	$70,343

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Research and development expenses increased by $1.1 million and $14.7 million in the three and six months ended June 30, 2017, respectively, compared to the same periods in 2016 primarily due to higher personnel costs. Personnel expenses increased by $4.9 million and $11.3 million in the three and six months ended June 30, 2017, respectively, compared to the same periods in 2016, primarily driven by increased headcount in support of our development programs. Clinical studies and outside services costs decreased in the three and six months ended June 30, 2017 compared to the same periods in 2016 primarily due to lower clinical trial costs for JZP-110 studies for ES associated with OSA and with narcolepsy, partially offset by expenses with respect to regulatory activities related to Vyxeos and higher expenses for continued investments in sleep-related research and development programs.

For 2017 and beyond, we expect that our research and development expenses will continue to increase from historical levels particularly as we prepare for a number of anticipated regulatory submissions, initiate and undertake additional clinical trials and related development work and potentially acquire rights to additional product candidates. A discussion of the risks and uncertainties with respect to our research and development activities, including completing the development of our product candidates, and the consequences to our business, financial position and growth prospects can be found in “Risk Factors” in Part II, Item 1A of this Quarterly Report on Form 10-Q.

Acquired In-Process Research and Development

Acquired in-process research and development, or IPR&D, expense in the three and six months ended June 30, 2017 related to an upfront payment of $2.0 million to acquire licenses for technology that supports recombinant crisantaspase product development activities. Acquired IPR&D expense in the six months ended June 30, 2016 related to an upfront payment of $8.8 million in connection with the acquisition of intellectual property and know-how related to recombinant crisantaspase.

Intangible Asset Amortization

Intangible asset amortization for the three months ended June 30, 2017 was in line with the same period in 2016. Intangible asset amortization increased in the six months ended June 30, 2017 compared to the same period in 2016 primarily due to the commencement of amortization of the Defitelio U.S. intangible asset upon FDA approval in March 2016, partially offset by the impact of foreign exchange rates on euro-denominated assets. We expect intangible asset amortization to increase in 2017 compared to 2016 as a result of the FDA’s approval of Vyxeos and commencement of amortization of the related intangible asset.

Interest Expense, Net

In July 2016, we entered into the amended credit agreement, which provides for a revolving credit facility of $1.25 billion, of which $1.0 billion was drawn to partially fund the Celator Acquisition, and a $750.0 million term loan facility. As of June 30, 2017, $500.0 million of revolving credit facility borrowings and $694.8 million principal amount of the term loan remained outstanding. Interest expense, net increased by $6.2 million and $12.8 million in the three and six months ended June 30, 2017, respectively, compared to the same periods in 2016, primarily due to the increase in our average debt balance and higher interest rates in the 2017 periods. We expect interest expense will be higher in 2017 compared to 2016 primarily due to the increase in our average debt balance.

Foreign Exchange Loss

The foreign currency loss in the three and six months ended June 30, 2017 primarily related to the translation of euro-denominated net monetary liabilities, primarily intercompany balances, held by subsidiaries with a U.S. dollar functional currency.

Income Tax Provision

Our income tax provision was $35.5 million and $64.7 million in the three and six months ended June 30, 2017, respectively, compared to $42.1 million and $74.5 million for the same periods in 2016. The effective tax rates were 25.1% and 25.2% in the three and six months ended June 30, 2017, respectively, compared to 26.9% and 28.1% for the same periods in 2016. The decrease in the effective tax rate for the three months ended June 30, 2017 compared to the same period in 2016 was primarily due to changes in income mix among the various jurisdictions in which we operate. The decrease in the effective tax rate for the six months ended June 30, 2017 compared to the same period in 2016 was primarily due to changes in income mix among the various jurisdictions in which we operate and tax benefit associated with share-based compensation. The effective tax rates for the three and six months ended June 30, 2017

were higher than the Irish statutory rate of 12.5% primarily due to income taxable at a rate higher than the Irish statutory rate, uncertain tax positions, and various expenses not deductible for tax purposes, partially offset by originating tax credits and deductions available in relation to subsidiary equity.

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Equity in Net Loss of Investee

Equity in net loss of investee relates to our share in the net loss of a company in which we have made an investment accounted for under the equity method of accounting.

Liquidity and Capital Resources

As of June 30, 2017, we had cash, cash equivalents and investments of $319.2 million, borrowing availability under our revolving credit facility of $750.0 million and long-term debt principal balance of $1.8 billion. Our long-term debt included $694.8 million aggregate principal amount term loan, $500.0 million in outstanding borrowings under our revolving credit facility and $575.0 million principal amount of the 2021 Notes. We generated cash flows from operations of$299.6 million during the six months ended June 30, 2017, and we expect to continue to generate positive cash flows from operations during 2017.

We believe that our existing cash balances, cash we expect to generate from operations and funds available under our revolving credit facility will be sufficient to fund our operations and to meet our existing obligations for the foreseeable future. The adequacy of our cash resources depends on many assumptions, including primarily our assumptions with respect to product sales and expenses, as well as the other risk factors under the headings “Xyrem is our largest selling product, and our inability to maintain or increase sales of Xyrem would have a material adverse effect on our business, financial condition, results of operations and growth prospects,” “The launch of a generic version of Xyrem or other sodium oxybate products that compete with Xyrem would adversely affect sales of Xyrem,” “The distribution and sale of Xyrem are subject to significant regulatory oversight and restrictions and the requirements of a risk evaluation and mitigation strategy, and these restrictions and requirements, as well as the potential impact of changes to these restrictions and requirements, subject us to increased risks and uncertainties, any of which could negatively impact sales of Xyrem,” and “To continue to grow our business, we will need to commit substantial resources, which could result in future losses or otherwise limit our opportunities or affect our ability to operate our business” set forth in Part II, Item 1A of this Quarterly Report on Form 10-Q. Our assumptions may prove to be wrong or other factors may adversely affect our business, and as a result we could exhaust or significantly decrease our available cash resources, and we may not be able to generate sufficient cash to service our debt obligations which could, among other things, force us to raise additional funds and/or force us to reduce our expenses, either of which could have a material adverse effect on our business.

To continue to grow our business over the longer term, we plan to commit substantial resources to product acquisition and in-licensing, product development, clinical trials of product candidates and expansion of our commercial, manufacturing and other operations. In this regard, we have evaluated and expect to continue to evaluate a wide array of strategic transactions as part of our strategy to acquire or in-license and develop additional products and product candidates. Acquisition opportunities that we pursue could materially affect our liquidity and capital resources and may require us to incur additional indebtedness, seek equity capital or both. In addition, we may pursue new operations or continue the expansion of our existing operations. Accordingly, we expect to continue to opportunistically seek access to additional capital to license or acquire additional products, product candidates or companies to expand our operations or for general corporate purposes. Raising additional capital could be accomplished through one or more public or private debt or equity financings, collaborations or partnering arrangements. Any equity financing would be dilutive to our shareholders, and the consent of the lenders under the amended credit agreement could be required for certain financings.

In November 2016, our board of directors authorized a new share repurchase program pursuant to which we are authorized to repurchase a number of ordinary shares having an aggregate purchase price of up to $300 million, exclusive of any brokerage commissions. Under this program, which has no expiration date, we may repurchase ordinary shares from time to time on the open market. The timing and amount of repurchases will depend on a variety of factors, including the price of our ordinary shares, alternative investment opportunities, restrictions under the amended credit agreement, corporate and regulatory requirements and market conditions. In the six months ended June 30, 2017, we spent a total of $30.9 million to purchase 0.2 million of our ordinary shares under the share repurchase program at an average total purchase price, including commissions, of $134.10 per share.

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The following table presents a summary of our cash flows for the periods indicated (in thousands):

	Six Months Ended June 30,	
	2017	2016
Net cash provided by operating activities	$299,631	$278,668
Net cash used in investing activities	(33,725)	(218,262)
Net cash used in financing activities	(396,155)	(182,193)
Effect of exchange rates on cash and cash equivalents	3,499	968
Net decrease in cash and cash equivalents	$(126,750)	$(120,819)

Net cash provided by operating activities of $299.6 million for the six months ended June 30, 2017 related to net income of $192.1 million, adjusted for upfront payment for acquired IPR&D of $2.0 million and non-cash items of $102.0 million primarily related to intangible asset amortization and share-based compensation expense and a net cash inflow of $3.6 million related to changes in operating assets and liabilities. Net cash provided by operating activities of $278.7 million for the six months ended June 30, 2016 related to net income of $190.3 million, adjusted for upfront payment for acquired IPR&D of $8.8 million and non-cash items of $107.4 million primarily related to intangible asset amortization and share-based compensation expense. This was partially offset by a net cash outflow of $27.8 million related to changes in operating assets and liabilities.

Net cash used in investing activities for the six months ended June 30, 2017 primarily related to the acquisition of investments of $20.0 million and purchases of property and equipment of $11.7 million. Net cash used in investing activities for the six months ended June 30, 2016 primarily related to a $150.0 million milestone payment to Sigma-Tau Pharmaceuticals, Inc. that was triggered by the FDA approval of Defitelio on March 30, 2016, purchase of investments of $53.5 million, an upfront payment of $8.8 million in connection with the acquisition of intellectual property and know-how related to recombinant crisantaspase and purchases of property and equipment of $6.0 million.

Net cash used in financing activities for the six months ended June 30, 2017 primarily related to repayment of borrowings under our revolving credit facility of $350.0 million, repurchase of ordinary shares under our share repurchase program of $30.9 million, repayment of our term loan principal of $18.0 million and payment of employee withholding taxes of $16.3 million related to share-based awards, partially offset by proceeds from employee equity incentive and purchase plans of $19.1 million. Net cash used in financing activities for the six months ended June 30, 2016 primarily related to repurchase of ordinary shares under our prior share repurchase program of $163.2 million, repayment of our term loan principal of $19.3 million and payment of employee withholding taxes of $14.3 million related to share-based awards, partially offset by proceeds from employee equity incentive and purchase plans of $14.6 million.

Credit Agreement

On June 18, 2015, Jazz Pharmaceuticals plc, as guarantor, and certain of our wholly owned subsidiaries, as borrowers, entered into the 2015 credit agreement that provided for a $750.0 million principal amount term loan, which was drawn in full at closing, and a $750.0 million revolving credit facility, of which $160.0 million was drawn at closing and subsequently repaid. We used the proceeds from initial borrowings under the 2015 credit agreement to repay in full the $893.1 million principal amount of term loans outstanding under the previous credit agreement, and to pay related fees and expenses. The previous credit agreement was terminated upon repayment of the term loans outstanding thereunder.

On July 12, 2016, Jazz Pharmaceuticals plc, as guarantor, and certain of our wholly owned subsidiaries, as borrowers, entered into Amendment No. 1 to our 2015 credit agreement. The amended credit agreement provides for a revolving credit facility of $1.25 billion, which replaces the revolving credit facility of $750.0 million provided for under the 2015 credit agreement, and a $750.0 million term loan facility, of which $694.8 million principal amount was outstanding as of June 30, 2017. We used the proceeds of $1.0 billion of loans under the revolving credit facility, of which $500.0 million was outstanding as of June 30, 2017, together with cash on hand, to fund the Celator Acquisition, and we expect to use the proceeds from future loans under the revolving credit facility, if any, for general

corporate purposes, including corporate development activities.

Under the amended credit agreement, the term loan matures on July 12, 2021 and the revolving credit facility terminates, and any loans outstanding thereunder become due and payable, on July 12, 2021.

Borrowings under the amended credit agreement bear interest, at our option, at a rate equal to either (a) the LIBOR rate, plus an applicable margin ranging from 1.50% to 2.25% per annum, based upon our secured leverage ratio, or (b) the prime lending rate, plus an applicable margin ranging from 0.50% to 1.25% per annum, based upon our secured leverage ratio. The revolving credit facility has a commitment fee payable on the undrawn amount ranging from 0.25% to 0.35% per annum based upon our secured leverage ratio.

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Jazz Pharmaceuticals plc and certain of our wholly owned subsidiaries are borrowers under the amended credit agreement. The borrowers' obligations under the amended credit agreement and any hedging or cash management obligations entered into with a lender are guaranteed on a senior secured basis by Jazz Pharmaceuticals plc and certain of our subsidiaries (including the issuer of the 2021 Notes as described below) and are secured by substantially all of Jazz Pharmaceuticals plc's, the borrowers' and the guarantor subsidiaries' assets.

We may make voluntary prepayments of principal at any time without payment of a premium. We are required to make mandatory prepayments of the term loan (without payment of a premium) with (1) net cash proceeds from certain non-ordinary course asset sales (subject to reinvestment rights and other exceptions), (2) net cash proceeds from issuances of debt (other than certain permitted debt), and (3) casualty proceeds and condemnation awards (subject to reinvestment rights and other exceptions).

Principal repayments of the term loan, which are due quarterly, began in December 2016 and are equal to 5.0% per annum of the principal amount outstanding on July 12, 2016 of $721.9 million during the first two years, 7.5% per annum during the third year, 10.0% per annum during the fourth year and 12.5% per annum during the fifth year, with any remaining balance payable on the maturity date.

The amended credit agreement contains financial covenants that require Jazz Pharmaceuticals plc and its restricted subsidiaries to not (a) exceed a maximum secured net leverage ratio or (b) fall below a cash interest coverage ratio. We were, as of June 30, 2017, and are currently, in compliance with these financial covenants.

Exchangeable Senior Notes

In August 2014, Jazz Pharmaceuticals plc, through our wholly owned finance subsidiary Jazz Investments I Limited, completed a private placement of $575.0 million principal amount of the 2021 Notes. The 2021 Notes are the senior unsecured obligations of Jazz Investments I Limited and are fully and unconditionally guaranteed on a senior unsecured basis by Jazz Pharmaceuticals plc. Interest on the 2021 Notes is payable semi-annually in cash in arrears on February 15 and August 15 of each year, beginning on February 15, 2015, at a rate of 1.875% per year. In certain circumstances, we may be required to pay additional amounts as a result of any applicable tax withholding or deductions required in respect of payments on the 2021 Notes. The 2021 Notes mature on August 15, 2021, unless earlier exchanged, repurchased or redeemed.

The holders of the 2021 Notes have the ability to require us to repurchase all or a portion of their 2021 Notes for cash in the event we undergo certain fundamental changes, such as specified change of control transactions, our liquidation or dissolution or the delisting of our ordinary shares from The NASDAQ Global Select Market. Prior to August 15, 2021, we may redeem the 2021 Notes, in whole but not in part, subject to compliance with certain conditions, if we have, or on the next interest payment date would, become obligated to pay to the holder of any 2021 Note additional amounts as a result of certain tax-related events. We also may redeem the 2021 Notes on or after August 20, 2018, in whole or in part, if the last reported sale price per ordinary share has been at least 130% of the exchange price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period ending on, and including, the trading day immediately preceding the date on which we provide the notice of redemption.

The 2021 Notes are exchangeable at an initial exchange rate of 5.0057 ordinary shares per $1,000 principal amount of 2021 Notes, which is equivalent to an initial exchange price of approximately $199.77 per ordinary share. Upon exchange, the 2021 Notes may be settled in cash, ordinary shares or a combination of cash and ordinary shares, at our election. Our intent and policy is to settle the principal amount of the 2021 Notes in cash upon exchange. The exchange rate will be subject to adjustment in some events but will not be adjusted for any accrued and unpaid interest. In addition, following certain make-whole fundamental changes occurring prior to the maturity date of the 2021 Notes or upon our issuance of a notice of redemption, we will in certain circumstances increase the exchange rate for holders of the 2021 Notes who elect to exchange their 2021 Notes in connection with that make-whole fundamental change or during the related redemption period. Prior to February 15, 2021, the 2021 Notes will be exchangeable only upon satisfaction of certain conditions and during certain periods, and thereafter, at any time until the close of business on the second scheduled trading day immediately preceding the maturity date.

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Contractual Obligations

The table below presents a summary of our contractual obligations as of June 30, 2017 (in thousands):

	Payments Due By Period				
Contractual Obligations (1)	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 years
Term loan - principal	$694,805	$36,094	$117,305	$541,406	$ —
Term loan - interest (2)	81,704	22,593	41,158	17,953	—
2021 Notes - principal	575,000	—	—	575,000	—
2021 Notes - interest (3)	48,516	10,781	21,563	16,172	—
Revolving credit facility - principal	500,000	—	—	500,000	—
Revolving credit facility - interest (2)	60,198	15,474	29,533	15,191	—
Revolving credit facility - commitment fee (4)	9,200	2,281	4,569	2,350	—
Commitment to equity method investees	28,900	5,900	14,000	9,000	—
Purchase obligations (5)	32,603	31,442	431	475	255
Operating and facility lease obligations (6)	135,287	17,069	27,320	21,708	69,190
Total	$2,166,213	$141,634	$255,879	$1,699,255	$ 69,445

(1) This table does not include potential future milestone payment or royalty obligations to third parties under asset purchase, product development, license and other agreements as the timing and likelihood of such milestone payments are not known, and, in the case of royalty obligations, as the amount of such obligations are not estimable. In 2014, we signed a definitive agreement with Aerial under which we acquired worldwide development, manufacturing and commercial rights to JZP-110 (other than in certain jurisdictions in Asia where SK retains rights). Aerial and SK are currently eligible to receive milestone payments up to an aggregate of $270 million based on development, regulatory and sales milestones and tiered royalties from high single digits to mid-teens based on potential future sales of JZP-110. In July 2016, we entered into an agreement with Pfenex Inc., or Pfenex, under which Pfenex granted us worldwide rights to develop and commercialize multiple early-stage hematology product candidates. The agreement also includes an option for us to negotiate a license for a recombinant pegaspargase product candidate with Pfenex. Under the agreement, Pfenex received upfront, option and development milestone payments totaling $15.8 million and may be eligible to receive additional payments of up to $165 million based on the achievement of development, regulatory and sales milestones. Potential future milestone payments to other third parties under other agreements could be up to an aggregate of $277 million, of which up to $120 million will become due and payable to Perrigo Company plc (formerly Elan Pharmaceuticals, Inc.) in tiered contingent payments, with the first such payment becoming due if net sales of Prialt of at least $75 million are achieved in a calendar year. The remainder would become due and payable to other third parties upon the achievement of certain developmental, clinical, regulatory and/or commercial milestones, the timing and likelihood of which are not known. We are also obligated under these agreements to pay royalties on net sales of certain products at specified rates, which royalties are dependent on future product sales and are not provided for in the table above as they are not estimable.

(2) Estimated interest for variable rate debt was calculated based on the interest rates in effect as of June 30, 2017. The interest rates for our term loan and revolving credit facility borrowings were 2.98% and 2.91%, respectively, as of June 30, 2017. Interest that is fixed, associated with our interest rate swaps, is calculated based on the fixed interest swap rate as of June 30, 2017.

(3) We used the fixed interest rate of 1.875% to estimate interest owed on the 2021 Notes as of June 30, 2017 until the final maturity date in August 2021.

(4) Our revolving credit facility has a commitment fee payable on the undrawn amount ranging from 0.25% to 0.35% per annum based upon our secured leverage ratio. In the table above, we used a rate of 0.30% and assumed undrawn amounts of $750.0 million as of June 30, 2017 to estimate commitment fees owed.

(5) Consists primarily of non-cancelable commitments to third party manufacturers.

(6) Consists primarily of the minimum lease payments for our office buildings and automobile lease payments for our sales force, including a lease agreement we entered into in January 2015 to lease office space located in Palo Alto, California. We expect to occupy this office space by the end of 2017. We are obligated to make lease payments totaling approximately $88 million over the initial term of the lease. Not included in the table above are our estimated costs of approximately $20 million associated with the design, development and construction of tenant improvements under this lease agreement, which estimate does not include a tenant improvement allowance to be provided by the landlord. Operating expenses associated with our leased office buildings are also not included in table above.

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We do not provide for Irish income taxes on undistributed earnings of our foreign operations that are intended to be indefinitely reinvested in our foreign subsidiaries. In addition, our liability for unrecognized tax benefits has been excluded from the above contractual obligations table as the nature and timing of future payments, if any, cannot be reasonably estimated. We do not anticipate that the amount of our existing liability for unrecognized tax benefits will significantly change in the next twelve months.

Critical Accounting Estimates

To understand our financial statements, it is important to understand our critical accounting estimates. The preparation of our financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Significant estimates and assumptions are required in determining the amounts to be deducted from gross revenues, in particular estimates of government rebates, which include Medicaid and TRICARE rebates, and estimated product returns. Significant estimates and assumptions are also required to determine whether to capitalize intangible assets, the amortization periods for identifiable intangible assets, the potential impairment of goodwill and other intangible assets, income taxes and share-based compensation. Some of these judgments can be subjective and complex, and, consequently, actual results may differ from these estimates. For any given individual estimate or assumption we make, there may also be other estimates or assumptions that are reasonable. Although we believe our estimates and assumptions are reasonable, they are based upon information available at the time the estimates and assumptions were made.

Our critical accounting policies and significant estimates are detailed in our Annual Report on Form 10-K for the year ended December 31, 2016. Our critical accounting policies and significant estimates have not changed substantially from those previously disclosed in our Annual Report on Form 10-K for the year ended December 31, 2016.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements.

Cautionary Note Regarding Forward-Looking Statements

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, which are subject to the “safe harbor” created by those sections. Forward-looking statements are based on our management’s current plans, objectives, estimates, expectations and intentions and on information currently available to our management. In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “could,” “would,” “expect,” “plan,” “anticipate,” “believe,” “estimate,” “project,” “predict,” “propose,” “intend,” “continue,” “potential” “foreseeable,” “likely,” “unforeseen” and similar expressions intended to identify forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance, time frames or achievements to be materially different from any future results, performance, time frames or achievements expressed or implied by the forward-looking statements. We discuss many of these risks, uncertainties and other risk factors in greater detail under Part II, Item 1A of this Quarterly Report on Form 10-Q. Given these risks, uncertainties and other factors, you should not place undue reliance on these forward-looking statements. Also, these forward-looking statements represent our plans, objectives, estimates, expectations and intentions only as of the date of this filing. You should read this Quarterly Report on Form 10-Q completely and with the understanding that our actual future results and the timing of events may be materially different from what we expect. We hereby qualify our forward-looking statements by our cautionary statements. Except as required by law, we undertake no obligation to update or supplement any forward-looking statements publicly, or to update or supplement the reasons that actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Except as set forth below, during the three and six months ended June 30, 2017, there were no material changes to our market risk disclosures as set forth in Part II, Item 7A “Quantitative and Qualitative Disclosures About Market Risk” in our Annual Report on Form 10-K for the year ended December 31, 2016.

Swap Agreements and Interest Rate Risk. We are exposed to risks associated with changes in interest rates in connection with our term loan and borrowings under our revolving credit facility. On July 12, 2016, we entered into the amended credit agreement, which provides for a revolving credit facility of $1.25 billion replacing our prior revolving credit facility of $750.0 million, and a $750.0 million term loan facility, of which $694.8 million principal amount was outstanding as of June 30, 2017.

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We used the proceeds of $1.0 billion of loans under the revolving credit facility, of which $500.0 million was outstanding as of June 30, 2017, together with cash on hand, to fund the Celator Acquisition. To achieve a desired mix of floating and fixed interest rates on our term loan, we entered into interest rate swap agreements in March 2017 that are designated as cash flow hedges. The interest rate swap agreements have a notional amount of $300.0 million and are effective from March 3, 2017 through July 12, 2021 and convert the floating rate on a portion of our term loan to a fixed rate of 1.895%, plus the borrowing spread. The impact of a hypothetical increase or decrease in interest rates on the fair value of our interest rate swap contracts would be offset by a change in the value of the underlying liability. If interest rates were to increase or decrease by 1%, interest expense for the remainder of 2017 would increase or decrease by $4.6 million, based on the unhedged portion of our outstanding variable rate borrowings.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures. We have carried out an evaluation under the supervision and with the participation of management, including our principal executive officer and principal financial officer, of our disclosure controls and procedures (as defined in Rule 13a-15(e) of the Securities Exchange Act of 1934, as amended) as of the end of the period covered by this Quarterly Report on Form 10-Q. Based on their evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective as of June 30, 2017.

Limitations on the Effectiveness of Controls. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Because of inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues, if any, within an organization have been detected. Accordingly, our disclosure controls and procedures are designed to provide reasonable, not absolute, assurance that the objectives of our disclosure control system are met and, as set forth above, our principal executive officer and principal financial officer have concluded, based on their evaluation as of the end of the period covered by this report, that our disclosure controls and procedures were effective to provide reasonable assurance that the objectives of our disclosure control system were met.

Changes in Internal Control over Financial Reporting. During the quarter ended June 30, 2017, there have been no changes to our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

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PART II – OTHER INFORMATION

Item 1. Legal Proceedings

Xyrem ANDA Matters Relating to the First ANDA Filer. On October 18, 2010, we received a notice of Paragraph IV Patent Certification, or Paragraph IV Certification, from West-Ward Pharmaceuticals Corp. (a wholly owned subsidiary of Hikma Pharmaceuticals PLC), which acquired Roxane Laboratories, Inc., or West-Ward, that it had submitted an abbreviated new drug application, or ANDA, to the U.S. Food and Drug Administration, or FDA, requesting approval to market a generic version of Xyrem. West-Ward's initial notice alleged that three patents then listed for Xyrem in the FDA's publication "Approved Drug Products with Therapeutic Equivalence Evaluations," or Orange Book, on the date of the notice are invalid, unenforceable or not infringed by West-Ward's proposed generic product. On November 22, 2010, we filed a lawsuit against West-Ward in response to West-Ward's initial notice in the U.S. District Court for the District of New Jersey, or the District Court, in which we sought a permanent injunction to prevent West-Ward from introducing a generic version of Xyrem that would infringe our patents. Additional patents covering Xyrem have been issued both before and since December 2010, and after receiving Paragraph IV Certification notices from West-Ward with respect to those patents, we filed additional lawsuits against West-Ward to include these additional patents in the litigation.

On April 5, 2017, we entered into a settlement agreement and related agreements resolving our patent infringement litigation against West-Ward in the District Court. On April 10, 2017, the District Court approved an order dismissing the litigation. We have released West-Ward from all claims asserting that patents covering Xyrem are or would be infringed by the West-Ward ANDA, and West-Ward has released us from all claims asserting that the patents covering Xyrem are unenforceable, unpatentable, invalid or not infringed by the generic version of Xyrem covered by West-Ward's ANDA. In accordance with legal requirements, we and West-Ward have submitted the settlement agreement to the U.S. Federal Trade Commission and the U.S. Department of Justice for review. For more information regarding the settlement agreement with West-Ward, see "Overview—Significant Developments Affecting Our Business" in Part I, Item 2 of this Quarterly Report on Form 10-Q.

Xyrem ANDA Matters Relating to Second Filers. On December 10, 2012, we received notice of Paragraph IV Certification from Amneal Pharmaceuticals, LLC, or Amneal, that it had submitted an ANDA to the FDA requesting approval to market a generic version of Xyrem. On January 18, 2013, we filed a lawsuit against Amneal in the District Court alleging that our patents covering Xyrem are infringed or will be infringed by Amneal's ANDA and seeking a permanent injunction to prevent Amneal from introducing a generic version of Xyrem that would infringe these patents. On November 21, 2013, we received notice of Paragraph IV Certification from Par Pharmaceutical, Inc., or Par, that it had submitted an ANDA to the FDA requesting approval to market a generic version of Xyrem. On December 27, 2013, we filed a lawsuit against Par in the District Court alleging that our patents covering Xyrem are infringed or will be infringed by Par's ANDA and seeking a permanent injunction to prevent Par from introducing a generic version of Xyrem that would infringe these patents.

In April 2014, Amneal asked the District Court to consolidate its case with the Par case, stating that both cases would proceed on the schedule for the Par case. The District Court granted this request in May 2014. The order consolidating the cases extended Amneal's 30-month stay period to coincide with the date of Par's 30-month stay period. The stay expired on May 20, 2016.

Additional patents covering Xyrem have issued since April 2014 and have been listed in the Orange Book for Xyrem. Amneal and Par have given us additional notices of Paragraph IV Certifications regarding such patents, and we have filed additional lawsuits against Amneal and Par in the District Court alleging that our patents covering Xyrem are infringed or will be infringed by Amneal's and Par's ANDAs and seeking a permanent injunction to prevent Amneal and Par from introducing a generic version of Xyrem that would infringe our patents. In March 2016, Par moved to dismiss claims involving our patents covering a part of the Xyrem label that instructs prescribers on adjusting the dose of Xyrem when it is being co-administered with divalproex sodium (also known as valproate or valproic acid), or our method of administration patents relating to a drug-drug interaction, or DDI patents. In August 2016, we and Par stipulated to dismiss claims relating to our patents covering the formulation of Xyrem on the grounds that Par had

notified FDA that it had converted its Paragraph IV Certifications to a Paragraph III Certification.

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On June 4, 2014, we received a notice of Paragraph IV Certification from Ohm Laboratories Inc., formerly known as Ranbaxy, Inc., or Ohm, that it had submitted an ANDA to the FDA requesting approval to market a generic version of Xyrem. On July 15, 2014, we filed a lawsuit against Ohm in the District Court alleging that our patents covering Xyrem are infringed or will be infringed by Ohm's ANDA and seeking a permanent injunction to prevent Ohm from introducing a generic version of Xyrem that would infringe our patents. Since June 2014, we have received additional notices of Paragraph IV Certification from Ohm regarding newly issued patents for Xyrem listed in the Orange Book, and we have filed additional lawsuits against Ohm in the District Court alleging that our patents covering Xyrem are infringed or will be infringed by Ohm's ANDA and seeking a permanent injunction to prevent Ohm from introducing a generic version of Xyrem that would infringe our patents. In May 2016, the Ohm litigation was settled as described below. In the first quarter of 2017, the FDA tentatively approved the ANDAs of Amneal and Ohm.

On October 30, 2014, we received a notice of Paragraph IV Certification from Teva Pharmaceutical Industries Ltd., formerly known as Watson Laboratories, Inc., or Teva, that it had submitted an ANDA to the FDA requesting approval to market a generic version of Xyrem. On December 11, 2014, we filed a lawsuit against Teva in the District Court alleging that our patents covering Xyrem are or will be infringed by Teva's ANDA and seeking a permanent injunction to prevent Teva from introducing a generic version of Xyrem that would infringe these patents. In March 2015, Teva moved to dismiss the portion of the case based on our Orange Book-listed REMS patents on the grounds that these patents do not cover patentable subject matter. In November 2015, the District Court administratively terminated this motion to dismiss (without prejudice) pending the outcome of inter partes review, or IPR, proceedings before the Patent Trial and Appeal Board, or PTAB, relating to the patents that were the subject of Teva's motion. Since March 2015, we have received an additional notice of Paragraph IV Certification from Teva regarding newly issued patents for Xyrem listed in the Orange Book, and we have filed an additional lawsuit against Teva in the District Court alleging that our patents covering Xyrem are or will be infringed by Teva's ANDA and seeking a permanent injunction to prevent Teva from introducing a generic version of Xyrem that would infringe these patents. In April 2015, the District Court issued an order that consolidated all then-pending lawsuits against Amneal, Par, Ohm and Teva into one case.

On June 8, 2015, we received a Paragraph IV Certification from Wockhardt Bio AG, or Wockhardt, that it had submitted an ANDA to the FDA requesting approval to market a generic version of Xyrem. On July 17, 2015, we filed a lawsuit in the District Court alleging that our patents covering Xyrem were or would be infringed by Wockhardt's ANDA and seeking a permanent injunction to prevent Wockhardt from introducing a generic version of Xyrem that would infringe our patents. On November 26, 2015, we received an additional notice of Paragraph IV Certification from Wockhardt regarding newly issued patents listed in the Orange Book, and we filed an additional lawsuit against Wockhardt in the District Court alleging that our patents covering Xyrem were or would be infringed by Wockhardt's ANDA and seeking a permanent injunction to prevent Wockhardt from introducing a generic version of Xyrem that would infringe these patents. In April 2016, the Wockhardt litigation was settled as set forth below.

On July 23, 2015, we received a Paragraph IV Certification from Lupin Inc., or Lupin, that it had submitted an ANDA to the FDA requesting approval to market a generic version of Xyrem. On September 2, 2015, we filed a lawsuit in the District Court alleging that our patents covering Xyrem are or will be infringed by Lupin's ANDA and seeking a permanent injunction to prevent Lupin from introducing a generic version of Xyrem that would infringe our patents. In January, April and June 2016, the District Court issued orders consolidating all of the cases then pending against Amneal, Par, Ohm, Teva, Wockhardt and Lupin into a single case for all purposes. No trial date has been set in that consolidated case.

Additional patents covering Xyrem have issued since June 2016 and have been listed in the Orange Book for Xyrem. We have received additional Paragraph IV notices from Amneal regarding such patents and have filed new lawsuits in the District Court, alleging that our additional patents covering Xyrem are or will be infringed by Amneal's ANDA and seeking a permanent injunction to prevent Amneal from introducing a generic version of Xyrem that would infringe our patents.

On June 14, 2017, we received a Paragraph IV Certification from Ascent Pharmaceuticals, Inc., or Ascent, that it had submitted an ANDA to the FDA requesting approval to market a generic version of Xyrem. On July 27 2017, we filed

lawsuits against Ascent in the District Court as well as in the U.S. District Court for the Eastern District of New York, where Ascent is incorporated, alleging that our patents covering Xyrem are infringed or will be infringed by Ascent's ANDA and seeking a permanent injunction to prevent Ascent from introducing a generic version of Xyrem that would infringe our patents.

We entered into settlement agreements with Wockhardt and Ohm on April 18, 2016 and May 9, 2016, respectively, that resolved our patent litigation against Wockhardt and Ohm. Under the settlement agreements, we granted each of Wockhardt and Ohm a license to manufacture, market, and sell its generic version of Xyrem on or after December 31, 2025, or earlier depending on the occurrence of certain events. The specific terms of the settlement agreements are confidential.

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The settlements with Wockhardt and Ohm do not resolve the lawsuits against Amneal, Par, Teva, Lupin and Ascent, which are ongoing. We cannot predict the specific timing or outcome of events in these matters with respect to the remaining defendants or the impact of developments involving any specific parties or patents on other ongoing proceedings with any ANDA filer.

Xyrem Post-Grant Patent Review Matters. In January 2015, certain of the ANDA filers filed petitions for IPR with respect to the validity of the six REMS patents. In July 2016, the PTAB issued final decisions that the claims of these six patents are unpatentable; as a result, if the United States Court of Appeals for the Federal Circuit upholds those decisions on appeal, these claims will be canceled. We have filed notices of appeal with respect to these IPR decisions to the United States Court of Appeals for the Federal Circuit. In September 2015, certain of the ANDA filers filed a petition for IPR with respect to the validity of an additional REMS patent. In March 2016, the PTAB partially instituted an IPR on three claims of a seventh REMS patent, declining to review 25 of 28 claims. In March 2017, the PTAB issued a final decision that the three claims that were reviewed by the PTAB are unpatentable. We have filed a notice of appeal of that decision on May 18, 2017, and the Court of Appeals for the Federal Circuit has consolidated the appeal of the March 2017 decision with the pending appeals of the July 2016 decisions.

We cannot predict whether additional post-grant patent review challenges will be filed by any of the ANDA filers or any other entity, the outcome of any pending IPR or other proceeding, the outcome of any appeal of the July 2016 IPR decisions with respect to the six REMS patents or the impact any IPR or other proceeding might have on ongoing ANDA litigation proceedings or other aspects of our Xyrem business.

Shareholder Litigation Matters Relating to Celator Acquisition. On June 21, 2016, a putative class-action lawsuit challenging our acquisition of Celator Pharmaceuticals, Inc., or Celator, captioned Dunbar v. Celator Pharmaceuticals, Inc., or the Dunbar action, was filed in the Superior Court of New Jersey. We refer to our acquisition of Celator in this report as the Celator Acquisition. The complaint was filed against Celator, each member of the Celator board of directors, Jazz Pharmaceuticals plc and our wholly owned subsidiary Plex Merger Sub, Inc., or Plex. The complaint generally alleges that the Celator directors breached their fiduciary duties in connection with the Celator Acquisition, and that Jazz Pharmaceuticals plc and Plex aided and abetted these alleged breaches of fiduciary duty. The complaint also generally asserts that the Celator directors breached their fiduciary duties to Celator's public stockholders by, among other things, (i) agreeing to sell Celator to us at an inadequate price, (ii) implementing an unfair process, (iii) agreeing to certain provisions of the merger agreement for the Celator Acquisition that allegedly favored us and deterred alternative bids, and (iv) failing to disclose purportedly material information in Celator's Schedule 14D-9 filing with the U.S. Securities and Exchange Commission, or SEC. The plaintiff sought, among other things, an injunction against the consummation of the Celator Acquisition and an award of costs and expenses, including a reasonable allowance for attorneys' and experts' fees.

Between June 27, 2016 and June 29, 2016, two putative class-action lawsuits challenging the Celator Acquisition, captioned Palmisciano v. Celator Pharmaceuticals, Inc., or the Palmisciano action, and Barreto v. Celator Pharmaceuticals, Inc., or the Barreto action, were filed in the District Court. The complaints were filed against Celator and each member of the Celator board of directors. The complaints assert causes of action under sections 14 and 20 of the Securities Exchange Act of 1934, as amended, predicated on Celator's and the Celator directors' alleged failure to disclose purportedly material information in Celator's Schedule 14D-9 filing with the SEC. The plaintiffs sought, among other things, an injunction against the consummation of the Celator Acquisition and an award of costs and expenses, including a reasonable allowance for attorneys' and experts' fees. Neither Jazz Pharmaceuticals plc nor Plex were named defendants in these actions.

On July 6, 2016, the defendants to the Dunbar action, the Palmisciano action and the Barreto action entered into a memorandum of understanding, or MOU, regarding settlement of these actions with the plaintiffs. The MOU outlines the terms of the parties' agreement in principle to settle and release all claims which were or could have been asserted in these actions. In consideration for such settlement and release, the parties to these actions agreed, among other things, that Celator would amend its Schedule 14D-9 to include certain supplemental disclosures. The Schedule 14D-9 was amended by Celator on July 6, 2016, and the Celator Acquisition was completed on July 12, 2016. The settlement remains subject to, among other items, confirmatory discovery, the execution of a stipulation of settlement by the

parties, final approval of the settlement by the District Court in the Barreto action and dismissal with prejudice of the Dunbar action and the Palmisciano action.

From time to time we are involved in legal proceedings arising in the ordinary course of business. We believe there is no other litigation pending that could have, individually or in the aggregate, a material adverse effect on our results of operations or financial condition.

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Item 1A. Risk Factors

We have identified the following risks and uncertainties that may have a material adverse effect on our business, financial condition or results of operations. The risks described below are not the only ones we face. Additional risks not presently known to us or that we currently believe are immaterial may also significantly impair our business operations. Our business could be harmed by any of these risks. The trading price of our ordinary shares could decline due to any of these risks, and you may lose all or part of your investment. In assessing these risks, you should also refer to the other information contained in this Quarterly Report on Form 10 Q, including our condensed consolidated financial statements and accompanying notes.

Risks Related to Xyrem and the Significant Impact of Xyrem Sales

Xyrem is our largest selling product, and our inability to maintain or increase sales of Xyrem would have a material adverse effect on our business, financial condition, results of operations and growth prospects.

Xyrem is our largest selling product, and our financial results are significantly influenced by sales of Xyrem, which accounted for 76% and 75% of our net product sales for the three and six months ended June 30, 2017, respectively, and 75% of our net product sales for the year ended December 31, 2016. Our future plans assume that sales of Xyrem will increase, although our plans assume a slower rate of increase than in recent years. While Xyrem product sales grew from 2015 to 2016, we cannot assure you that we can maintain sales of Xyrem at or near current levels, or that Xyrem sales will continue to grow. We have periodically increased the price of Xyrem, most recently in July 2017, and we cannot assure you that price adjustments we have taken or may take in the future will not negatively affect Xyrem sales volumes.

In addition to other risks described herein, our ability to maintain or increase Xyrem product sales is subject to a number of risks and uncertainties, the most important of which are discussed in more detail below, including those related to:

- the potential U.S. introduction of a generic version of Xyrem before the entry dates specified in our settlements with certain companies that had filed abbreviated new drug application, or ANDAs, with the U.S. Food and Drug Administration, or FDA, seeking approval to market a generic version of Xyrem or on terms that are different from those contemplated by the settlements, as further described below;
- the potential U.S. introduction of an alternative product to Xyrem for treating cataplexy and/or excessive daytime sleepiness, or EDS, in narcolepsy;
- changes to, increases in or uncertainties around regulatory restrictions, including changes to our Xyrem risk evaluation and mitigation strategy, or REMS, particularly in light of the FDA's waiver of the single shared system REMS requirement for sodium oxybate and approval of a separate generic sodium oxybate REMS, as further described below;
- any increase in pricing pressure from, or restrictions on reimbursement imposed by, third party payors;
- changes in healthcare laws and policy, including changes in requirements for patient assistance programs, rebates, reimbursement and coverage by federal healthcare programs, and changes resulting from increased scrutiny on pharmaceutical pricing and REMS programs by government entities;
- operational disruptions at the Xyrem central pharmacy or any failure to comply with our REMS obligations to the satisfaction of the FDA;
- any supply or manufacturing problems, including any problems with our sole source provider of the active pharmaceutical ingredient, or API, for Xyrem;
- continued acceptance of Xyrem by physicians and patients, even in the face of negative publicity that surfaces from time to time;
- changes to our label, including new safety warnings or changes to our boxed warning, that further restrict how we market and sell Xyrem; and
- our U.S.-based sodium oxybate and Xyrem suppliers' ability to obtain sufficient quotas from the U.S. Drug Enforcement Administration, or DEA, to satisfy our needs for Xyrem.

These and the other risks described below related to Xyrem product sales and protection of our proprietary rights could have a material adverse effect on our ability to maintain or increase sales of Xyrem.

If sales of Xyrem were to decline significantly, we might need to reduce our operating expenses or seek to raise additional funds, which would have a material adverse effect on our business, financial condition, results of operations and growth prospects, or we might not be able to acquire, in-license or develop new products in the future to grow our business.

The launch of a generic version of Xyrem or other sodium oxybate products that compete with Xyrem would adversely affect sales of Xyrem.

Although Xyrem is protected by patents covering its manufacture, formulation, distribution system and method of use, eight companies have filed ANDAs with the FDA seeking approval to market a generic version of Xyrem. In addition, we are aware of a third party that has stated that it intends to file a new drug application, or NDA, to market a once nightly formulation

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of sodium oxybate for treatment of cataplexy and/or EDS in narcolepsy under Section 505(b)(2) of the Federal Food, Drug and Cosmetic Act, or FDCA, which allows companies to seek approval of a product that is similar, but not identical, to a previously-approved brand-name product. We filed patent lawsuits against each of the ANDA filers in the U.S. District Court for the District of New Jersey, or the District Court, and an additional lawsuit against the most recent ANDA filer, Ascent Pharmaceuticals, Inc., or Ascent, in the U.S. District Court of the Eastern District of New York, or EDNY. On April 5, 2017, we settled all lawsuits against the first ANDA filer, West-Ward Pharmaceuticals Corp. (a wholly owned subsidiary of Hikma Pharmaceuticals PLC), which acquired Roxane Laboratories, Inc., or West-Ward, granting West-Ward the right to sell an authorized generic version of Xyrem, or the West-Ward AG Product, commencing on January 1, 2023, or earlier under certain circumstances, and granting West-Ward a license to launch its own generic sodium oxybate product as early as six months thereafter. Previously, in the second quarter of 2016, we had settled lawsuits with two of the other ANDA filers, granting those filers a license to manufacture, market and sell their generic versions of Xyrem on or after December 31, 2025, or earlier depending on the occurrence of certain events. Lawsuits with the remaining companies that have filed ANDAs with the FDA seeking approval to market a generic version of Xyrem (other than the lawsuits against Ascent) have been consolidated as one case and remain pending in the District Court. Although no trial date has been set, the trial in this consolidated case could occur as early as the first half of 2018. No trial dates have been set in the lawsuits against Ascent, which remain pending in the District Court and EDNY. We cannot predict the timing or outcome of the ANDA litigation proceedings against the remaining non-settling ANDA filers. For a description of these legal proceedings, see “Legal Proceedings” in Part II, Item 1 of this Quarterly Report on Form 10-Q.

Certain ANDA filers had also filed petitions for inter partes review, or IPR, by the Patent Trial and Appeal Board, or the PTAB, of the U.S. Patent and Trademark Office, or USPTO, with respect to the validity of certain distribution, method of use and formulation patents covering Xyrem. The PTAB instituted IPR trials with respect to patents and patent claims that are the subject of certain of these petitions. In July 2016, the PTAB issued final decisions that the claims of six patents listed in the FDA’s publication “Approved Drug Products with Therapeutic Equivalence Evaluations,” or Orange Book, as covering the Xyrem REMS are unpatentable. We filed a notice of appeal of these decisions on February 22, 2017. If the United States Court of Appeals for the Federal Circuit upholds those decisions on appeal, those claims will be canceled, and we will not be able to enforce those patents. In March 2016, the PTAB partially instituted an IPR on three claims of a seventh REMS patent, declining to review 25 of 28 claims, and issued a final decision in March 2017 that the three claims they reviewed are also unpatentable. We filed a notice of appeal of that decision on May 18, 2017, and the Court of Appeals for the Federal Circuit has consolidated the appeal of the March 2017 decision with the pending appeals of the July 2016 decisions. For a description of these legal proceedings, see “Legal Proceedings” in Part II, Item 1 of this Quarterly Report on Form 10-Q. We cannot predict whether additional post-grant patent review challenges will be filed by any of the ANDA filers or any other entity, the outcome of any proceeding, including any appeal, or the impact any IPR or other proceeding might have on ongoing ANDA litigation proceedings or other aspects of our Xyrem business.

On January 17, 2017, the FDA announced approval of West-Ward’s ANDA for a generic version of Xyrem. The FDA’s letter approving West-Ward’s ANDA notes that, as the first ANDA applicant, West-Ward is eligible for 180 days of generic drug exclusivity for its generic product. West-Ward’s ANDA approval also includes a waiver that permits West-Ward to use a separate REMS program from the Xyrem REMS, or the generic sodium oxybate REMS, on the condition that the generic sodium oxybate REMS be open to all future sponsors of ANDAs or NDAs for sodium oxybate products. On January 19, 2017, the FDA tentatively approved two additional ANDAs for generic versions of Xyrem, one for Amneal Pharmaceuticals, or Amneal, and one for Ohm Laboratories Inc., formerly known as Ranbaxy, Inc., or Ohm, and we believe that it is likely that the FDA will approve or tentatively approve additional ANDAs.

The actual timing of any commercial launch of an authorized generic or generic version of Xyrem is uncertain. In particular, in our settlement with West-Ward, we have agreed that West-Ward’s AG Product launch date (and thus, potentially, its generic product launch date) could accelerate to earlier than January 1, 2023 under certain circumstances, including events related to the market entry of other generic versions of Xyrem, a final decision that all

unexpired claims of the Xyrem patents are invalid and/or unenforceable, and a substantial reduction in Xyrem net sales over specified periods of time.

To the extent that one or more of the non-settling ANDA filers continues to litigate our Xyrem patents and obtains a final judicial decision prior to January 1, 2023 that all unexpired claims of the Xyrem patents are invalid and/or unenforceable, West-Ward's entry date would be accelerated to approximately the date of that final decision. In addition, one or more of the non-settling ANDA filers could potentially enter the market at such time to the extent that such filer(s) obtains or maintains FDA approval for its generic product and is able to distribute its product through an approved sodium oxybate REMS.

It is also possible that one or more of the non-settling ANDA filers that obtains or maintains FDA approval for its generic product and is able to distribute its product through an approved sodium oxybate REMS could launch its generic product in the absence of a final decision that all unexpired claims of the Xyrem patents are invalid and/or unenforceable. Circumstances that could result in such a launch include a judicial determination that the introduction of a generic product does not infringe our patents; a judicial determination not to grant an injunction that prevents any non-settling ANDA filer from marketing its generic product; or a decision by a non-settling ANDA filer, before applicable ongoing patent litigation is concluded, to launch a

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generic product at risk of being held liable for damages for patent infringement. It is also possible that we could enter into settlement agreements with one or more additional ANDA filers that would permit such filer to enter the market on or prior to the entry date(s) agreed with West-Ward. In the event of any such market entry by another ANDA filer, West-Ward's entry date would be accelerated to a date on or prior to the date of such entry, except in limited circumstances related to an "at risk" launch by a non-settling ANDA filer.

A substantial reduction in Xyrem net sales at the level required to accelerate West-Ward's entry date under our settlement could occur under various circumstances, including if we introduce, or a third party introduces, a product to treat EDS or cataplexy in narcolepsy that substantially erodes Xyrem net sales prior to January 1, 2023. For example, in addition to any products we might develop, other companies could also develop products that are similar, but not identical, to Xyrem, such as an alternative formulation or an alternative formulation combined with a different delivery technology, and seek approval in the U.S. by referencing Xyrem and relying, to some degree, on the FDA's approval of Xyrem and related determinations of safety and efficacy. In particular, Avadel Pharmaceuticals plc, or Avadel, a company that is using its proprietary technology for delivery of a sodium oxybate formulation to eliminate second nighttime dosing for narcolepsy patients, has stated that it is conducting a Phase 3 pivotal trial pursuant to an FDA-approved special protocol assessment, and has indicated that it intends to seek approval of its product candidate using a Section 505(b)(2) NDA approval pathway, which allows companies to seek approval of a product that is similar, but not identical, to a previously-approved brand-name product. If Avadel successfully develops, obtains FDA approval of and launches this product candidate, we expect that the launch of the approved product would compete with Xyrem and could result in a substantial reduction of Xyrem net sales, which could have the additional negative effect of potentially triggering acceleration of market entry of the West-Ward AG Product or West-Ward's own generic sodium oxybate product.

After any introduction of a generic product, a significant percentage of the prescriptions written for Xyrem may be filled with the generic product, resulting in a loss in sales of branded Xyrem, although we would continue to receive revenue based on sales of any authorized generic product. Generic competition often also results in decreases in the prices at which branded products can be sold, particularly when there is more than one generic available in the marketplace. West-Ward will establish the price of the West-Ward AG Product or West-Ward's own generic sodium oxybate product, and the price set by West-Ward may place downward pricing pressure on the price of Xyrem. In addition, certain U.S. state laws allow for, and in some instances in the absence of specific instructions from the prescribing physician mandate, the dispensing of generic products rather than branded products where a generic version is available. In addition, the FDA's approval of the generic sodium oxybate REMS means that such generic products could be distributed through multiple pharmacies. Such changes in the distribution of sodium oxybate may lead to negative experiences for patients, prescribers and the public that could impact acceptance of Xyrem as a treatment for EDS and cataplexy in narcolepsy.

We expect that the launch of any generic version of Xyrem, including the West-Ward AG Product or other authorized generic version of Xyrem, or the approval and launch of other products that compete with Xyrem, could have a material adverse effect on our sales of Xyrem and on our business, financial condition, results of operations and growth prospects. For further discussion regarding the risks associated with the West-Ward settlement agreement, the tentative approval of the Amneal and Ohm ANDAs, potential approval or tentative approval of additional ANDAs, the potential launch of a generic version of Xyrem, or the approval and launch of other sodium oxybate or other products that compete with Xyrem, as well as other risks and challenges we face with respect to Xyrem, see the other risk factors under the heading "Risks Related to Xyrem and the Significant Impact of Xyrem Sales" and the risk factors under the headings "We face substantial competition from other companies, including companies with greater resources, including larger sales organizations and more experience working with large and diverse product portfolios, than we have" and "Risks Related to Our Intellectual Property" in this Part II, Item 1A.

The distribution and sale of Xyrem are subject to significant regulatory oversight and restrictions and the requirements of a risk evaluation and mitigation strategy, and these restrictions and requirements, as well as the potential impact of changes to these restrictions and requirements, subject us to increased risks and uncertainties, any of which could negatively impact sales of Xyrem.

As a condition of approval of Xyrem, the FDA mandated that we maintain a risk management and controlled distribution system, or Xyrem Risk Management Program, to help ensure the safe distribution of Xyrem and minimize the risk of misuse, abuse and diversion of sodium oxybate. The Xyrem Risk Management Program included elements such as patient and physician education, a database of information to track and report certain information, and the use of a single central pharmacy to distribute Xyrem. The Xyrem Risk Management Program, adopted in 2002 before the FDA had authority to require REMS, was deemed to be an approved REMS pursuant to the Food and Drug Administration Amendments Act, or FDAAA. The FDAAA, which amended the FDCA, required that deemed REMS and related documents be updated to comply with the current requirements for REMS documents. In February 2015, the FDA notified Jazz Pharmaceuticals, Inc., our wholly owned subsidiary, of the FDA's approval of the current Xyrem REMS, which includes provisions requiring distribution through a single pharmacy.

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The 2015 Xyrem REMS approval letter included statements from the FDA that (i) the approval action should not be construed or understood as agreement with what the FDA stated was our position that dispensing through a single pharmacy is the only way to ensure that the benefits of Xyrem outweigh its risks, and that the FDA has continuing concerns that limiting the distribution of Xyrem to one pharmacy imposes burdens on patient access and the healthcare delivery system, and (ii) as with all REMS, the FDA intends to evaluate the Xyrem REMS on an ongoing basis and will require modifications as may be appropriate. We cannot predict whether the FDA will request, seek to require or ultimately require modifications to, or impose additional requirements on, the Xyrem REMS in connection with the approval of the generic sodium oxybate REMS, the anticipated distribution of the West-Ward AG Product, or otherwise, or the potential timing, terms or propriety thereof. Any such modifications or additional requirements could make it more difficult or expensive for us to distribute Xyrem, make distribution easier for sodium oxybate competitors, impair the safety profile of Xyrem and/or negatively affect sales of Xyrem. Moreover, a sodium oxybate distribution system that is less restrictive than the Xyrem REMS, such as the generic sodium oxybate REMS approved by the FDA in January 2017, may increase the risks associated with sodium oxybate distribution, as patients, consumers and others may not differentiate generic sodium oxybate from Xyrem, or differentiate between the different REMS programs. Any negative outcomes, including but not limited to risks to the public, caused by or otherwise related to a separate generic sodium oxybate REMS, could have a significant negative impact in terms of product liability, goodwill, and prescribers' willingness to prescribe, and patients' willingness to take, Xyrem, any of which could have a material adverse effect on our Xyrem revenues.

In August 2015, we implemented the current Xyrem REMS, and we have submitted and expect to continue to submit ongoing assessments as set forth in the FDA's Xyrem REMS approval letter. However, we cannot guarantee that our implementation and ongoing assessments will be satisfactory to the FDA or that the Xyrem REMS will satisfy the FDA's expectations in its evaluation of the Xyrem REMS on an ongoing basis. Any failure to comply with the REMS obligations could result in enforcement action by the FDA; lead to changes in our Xyrem REMS obligations; negatively affect sales of Xyrem; result in additional costs and expenses for us; and/or take a significant amount of time, any of which could materially and adversely affect our business, financial condition, results of operations and growth prospects.

While we have an exclusive agreement with Express Scripts Specialty Distribution Services, Inc., or Express Scripts, the central pharmacy for Xyrem, through June 2019, if the central pharmacy does not fulfill its contractual obligations to us, fails to meet the requirements of the Xyrem REMS applicable to the central pharmacy, provides timely notice that it wants to terminate our agreement, refuses or fails to adequately serve patients, or fails to promptly and adequately address operational challenges, whether expected or unexpected, the fulfillment of Xyrem prescriptions and our sales would be adversely affected. If we change to a new central pharmacy, new contracts might be required with government and other insurers who pay for Xyrem, and the terms of any new contracts could be less favorable to us than current agreements. In addition, any new central pharmacy would need to be registered with the DEA and would also need to implement the particular processes, procedures and activities necessary to distribute Xyrem under the Xyrem REMS. Transitioning to a new pharmacy could result in product shortages, which would negatively affect sales of Xyrem, result in additional costs and expenses for us and/or take a significant amount of time, any of which could materially and adversely affect our business, financial condition, results of operations and growth prospects.

Section 505-1(i)(1) of the FDCA generally provides that (i) an ANDA that references a drug subject to a REMS with elements to assure safe use, or ETASU, is required to have a REMS with the same elements as the reference listed drug, or RLD, and (ii) the ANDA drug and the RLD shall use a single shared system to assure safe use. However, the FDA may waive this requirement for a single shared system and approve an ANDA with a separate REMS with differing but comparable aspects of ETASU if the FDA either determines that the burden of creating a single shared system outweighs its benefit, or if the ANDA applicant certifies that it has been unable to obtain a license to any aspects of the REMS for the RLD that are covered by a patent or a trade secret. The FDCA provides that the FDA may seek to negotiate a license between the ANDA applicant and the sponsor of the RLD before granting a waiver of the single shared system requirement. The FDCA further states that a REMS shall not be used by the NDA holder to block or delay generic drugs or drugs covered by an application under Section 505(b)(2) from entering the market.

In January 2017, the FDA announced approval of the West-Ward ANDA and waived the shared REMS requirement. The FDA's waiver of the shared REMS requirement permits West-Ward to use the generic sodium oxybate REMS on the condition that the generic sodium oxybate REMS be open to all future sponsors of ANDAs or NDAs for sodium oxybate products. In connection with the waiver, FDA issued a statement that it considers the generic sodium oxybate REMS to have the same ETASU as the Xyrem REMS and operationalizes those elements in a comparable manner to achieve the same level of safety as the Xyrem REMS. We were not involved in development of the generic sodium oxybate REMS and were not consulted regarding any features of this REMS. Our settlement agreement with West-Ward does not directly impact the FDA's waiver of the single shared system REMS requirement or West-Ward's or any other ANDA filer's ability to develop and implement the generic sodium oxybate REMS for its generic sodium oxybate product. We cannot predict the outcome or impact on our business of any future action that we may take with respect to the FDA's waiver of the single shared system REMS requirement, its approval and tentative approval of generic versions of Xyrem or the consequences of distribution of sodium

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oxybate through the generic sodium oxybate REMS approved by the FDA. We expect that the launch of any generic version of Xyrem, including the West-Ward AG Product or other authorized generic version of Xyrem, or the approval and launch of other products that compete with Xyrem, could have a material adverse effect on our sales of Xyrem and on our business, financial condition, results of operations and growth prospects.

We may face pressure to modify the Xyrem REMS, or to license or share intellectual property pertinent to the Xyrem REMS, including proprietary data required for safe distribution of sodium oxybate, in connection with the FDA's approval of the generic sodium oxybate REMS.

We cannot predict the outcome or impact on our business of any future action that we may take with respect to the approval of the generic sodium oxybate REMS, or licensing or sharing intellectual property pertinent to the Xyrem REMS or elements of the Xyrem REMS.

In September 2016, Jazz Pharmaceuticals, Inc., our wholly owned subsidiary, submitted a Citizen Petition to the FDA requesting that, for safety reasons, the FDA refuse to approve any sodium oxybate ANDA with a proposed package insert or REMS that omits the portions of the Xyrem package insert and the Xyrem REMS that instruct prescribers on adjusting the dose of the product when it is co-administered with divalproex sodium (also known as valproate or valproic acid). On January 17, 2017, the FDA granted the Citizen Petition with respect to the Xyrem package insert. The FDA concluded that it will not approve any sodium oxybate ANDA referencing Xyrem that does not include in its package insert the portions of the currently approved Xyrem package insert related to the drug-drug interaction with divalproex sodium. The FDA stated that it did not need to reach the question of whether the drug-drug interaction information could have been excluded from the generic sodium oxybate REMS materials because it was approving a REMS in connection with a sodium oxybate ANDA including that information. Our Xyrem patents include three method of administration patents relating to a drug-drug interaction, or DDI patents, covering these instructions on the Xyrem package insert and Xyrem REMS. We cannot predict whether or when one or more of the ANDA filers may pursue a challenge to the FDA's response to the Citizen Petition or whether any such challenges would be successful. Likewise, we cannot predict whether we will be able to maintain the validity of any of our patents or will otherwise obtain a judicial determination that the generic sodium oxybate package insert or the generic sodium oxybate REMS will infringe any of our patents or, if we prevail in proving infringement, whether a court will grant an injunction that prevents any non-settling ANDA filer or other company introducing a different sodium oxybate product from marketing its product or instead require that party to pay damages in the form of lost profits or a reasonable royalty. For a description of the foregoing matters, see "Legal Proceedings" in Part II, Item 1 of this Quarterly Report on Form 10-Q and the risk factors under the headings "The launch of a generic version of Xyrem or other sodium oxybate products that compete with Xyrem would adversely affect sales of Xyrem" and "Risks Related to Our Intellectual Property" in this Part II, Item 1A.

The Federal Trade Commission, or FTC, has been paying increasing attention to the use of REMS by companies selling branded products, in particular to whether a REMS may be deliberately being used to reduce the risk of competition from generic drugs in a way that may be deemed to be anticompetitive. The FDA has recently stated that it will seek to coordinate with the FTC in identifying and publicizing practices the FTC finds to be anticompetitive and has further stated that the FDA has concerns related to the role of REMS programs in delaying approval of generic products. It is possible that the FTC, the FDA, other governmental authorities or others could claim or determine that we are using the Xyrem REMS in an anticompetitive manner (including in light of the FDA's statement in the Xyrem REMS approval letter that the Xyrem REMS could be used in an anticompetitive manner inconsistent with applicable provisions of the FDCA) or have engaged in other anticompetitive practices. The FDCA further states that a REMS ETASU shall not be used by an NDA holder to block or delay generic drugs or drugs covered by an application under Section 505(b)(2) from entering the market. Several of the ANDA applicants have asserted that our REMS patents should not have been listed in the Orange Book and that the Xyrem REMS is blocking competition. We cannot predict the outcome of these claims in the ongoing litigation or the impact of any similar claims that may be made in the future.

As required by the FDA and other regulatory agencies, the adverse event information that we collect for Xyrem is regularly reported to the FDA and could result in the FDA requiring changes to Xyrem labeling or taking or requiring

us to take other actions that could have an adverse effect on Xyrem's commercial success. Our Xyrem REMS includes unique features that provide more extensive information about adverse events, including deaths, than is generally available for other products that are not subject to similar REMS requirements.

The FDA has required that Xyrem's labeling include a boxed warning regarding the risk of central nervous system depression and misuse and abuse. A boxed warning is the strongest type of warning that the FDA can require for a drug product and warns prescribers that the drug carries a significant risk of serious or even life-threatening adverse effects. A boxed warning also means, among other things, that the product cannot be advertised through reminder ads, or ads that mention the pharmaceutical brand name but not the indication or medical condition it treats. We cannot predict whether the FDA will require additional warnings, including boxed warnings, to be included on Xyrem's labeling. Warnings in the Xyrem labeling

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and any limitations on our ability to advertise and promote Xyrem may have affected, and could in the future negatively affect, Xyrem sales and therefore our business, financial condition, results of operations and growth prospects.

Any failure to demonstrate our substantial compliance with applicable regulatory requirements to the satisfaction of the FDA or any other regulatory authority could result in such regulatory authorities taking actions in the future, which could have a material adverse effect on Xyrem sales and therefore on our business, financial condition, results of operations and growth prospects. For more information, see the risk factor under the heading "We are subject to significant ongoing regulatory obligations and oversight, which may result in significant additional expense and limit our ability to commercialize our products" in this Part II, Item 1A.

Risks Related to Our Business

While Xyrem remains our largest product, our success also depends on our ability to effectively commercialize our other products and, in the case of our product candidates, our ability to obtain regulatory approval in the U.S. and Europe and, if approved, to successfully launch and commercialize those product candidates. Our inability to do so could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

In addition to Xyrem, we are commercializing a portfolio of products, including our other lead marketed products, Erwinaze and Defitelio, and we have made a significant investment in Vyxeos, which was recently approved by the FDA, and other product candidates that are currently not approved as marketed products in any jurisdiction.

Erwinaze

Erwinaze (called Erwinase in markets outside the U.S.), a biologic product, is used in conjunction with chemotherapy to treat patients with acute lymphoblastic leukemia, or ALL, with hypersensitivity to E. coli-derived asparaginase. Erwinaze was approved by the FDA under a biologics license application, or BLA, and was launched in the U.S. in November 2011. It is also being sold under marketing authorizations, named patient programs, temporary use authorizations or similar authorizations in multiple countries in Europe and elsewhere. Erwinaze is licensed from and manufactured by a single source, Porton Biopharma Limited, or PBL, which is wholly owned by the U.K. Secretary of State for Health. Our agreement with PBL, including our license, expires in December 2020, subject to five-year extensions unless terminated by either party in writing by December 2018. We cannot predict whether the term of the agreement will be extended or, if extended, the terms of any such extension.

Erwinaze represents an important part of our strategy to grow sales of our existing products. However, our ability to successfully and sustainably maintain or grow sales of Erwinaze is subject to a number of challenges, including the limited population of patients with ALL and the incidence of hypersensitivity reactions to E. coli-derived asparaginase within that population and our need to apply for and receive marketing authorizations, through the European Union's, or EU's, mutual recognition procedure or otherwise in certain additional countries if we decide to launch promotional efforts in those countries. Another significant challenge to our ability to maintain current sales levels and to increase sales is our extremely limited inventory of Erwinaze, past and continuing supply disruptions and our need to minimize or avoid additional supply disruptions due to capacity constraints, production delays, quality or regulatory challenges and other manufacturing difficulties. See the discussion regarding Erwinaze supply issues in the risk factor under the heading "The loss of our single source suppliers, delays or problems in the supply of our products for commercial sale or our product candidates for use in our clinical trials, or our or our suppliers' failure to comply with manufacturing regulations, could materially and adversely affect our business, financial condition, results of operations and growth prospects" in this Part II, Item 1A.

We also face numerous other risks that may impact Erwinaze sales, including regulatory risks, the development of new asparaginase treatments or treatment protocols that could reduce the rate of hypersensitivity in patients with ALL, the development of new treatment protocols for ALL that may not include asparaginase-containing regimens, difficulties with obtaining and maintaining favorable pricing and reimbursement arrangements, and potential competition from future biosimilar products. In addition, if we fail to comply with our obligations under our agreement with the licensor and supplier of Erwinaze or lose rights to Erwinaze, including if our agreement terminates at the end of its current term in December 2020, or if we otherwise fail to maintain or grow sales of Erwinaze, our

growth prospects could be negatively affected.

Defitelio

We made a significant investment in Defitelio in 2014, adding the product to our portfolio as a result of our acquisition of Gentium S.r.l, or Gentium, which we refer to as the Gentium Acquisition, and then securing worldwide rights to the product by acquiring rights to defibrotide in the Americas in August 2014. We began to commercialize Defitelio in certain European countries in 2014. On March 30, 2016, the FDA approved our NDA for Defitelio for the treatment of adult and pediatric patients with hepatic veno-occlusive disease, or VOD, also known as sinusoidal obstruction syndrome, or SOS, with renal or pulmonary dysfunction following hematopoietic stem cell transplantation, or HSCT. We launched Defitelio in the U.S. shortly after FDA approval, and our U.S. commercial launch is still at an early stage.

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Our ability to realize the anticipated benefits from this investment is subject to risks and uncertainties, including:

- the continued acceptance of Defitelio in the U.S. by hospital pharmacy and therapeutics committees and the continued availability of adequate coverage and reimbursement by government programs and third party payors;
- the limited experience of U.S. physicians in diagnosing and treating VOD, particularly in adults, and the possibility that physicians may not initiate or may delay initiation of treatment while waiting for VOD symptoms to improve, or terminate treatment before the end of the recommended dosing schedule;
- our ability to successfully maintain or grow sales of Defitelio in Europe and other non-U.S. countries;
- delays or problems in the supply or manufacture of the product;
- the limited size of the population of VOD patients who are indicated for treatment with Defitelio (particularly if changes in HSCT treatment protocols reduce the incidence of VOD diagnosis);
- our ability to meet the post-marketing commitments and requirements imposed by the FDA in connection with its approval of our NDA for Defitelio; and
- our ability to obtain marketing approval in other countries and to develop the product for additional indications.

We are in the process of making pricing and reimbursement submissions with respect to Defitelio in certain European countries where Defitelio is not yet launched, including in countries where pricing and reimbursement approvals are required for launch. The process for obtaining pricing and reimbursement approvals is complex and can vary from country to country. We cannot predict the outcome of Defitelio's initial pricing and reimbursement submissions or any subsequent reviews. If we experience unforeseen difficulties in obtaining or maintaining favorable pricing and reimbursement in EU and non-EU markets, anticipated revenue from Defitelio could be adversely affected. In addition, orphan products that have significant impact on patient survival, such as Defitelio, may be budgeted on a local rather than national level. The balance of all of these factors will determine our ability to ultimately obtain and maintain favorable pricing and reimbursement approvals in Europe. Many European countries periodically review their reimbursement classes, which could have an adverse impact on the reimbursement status of Defitelio. We have developed estimates of anticipated pricing in the EU, which are based on our research and understanding of the product and target market. However, due to efforts to provide for containment of health care costs, one or more countries may not support our estimated level of governmental pricing and reimbursement for Defitelio, particularly in light of the budget crises faced by a number of countries in the EU, which would negatively impact anticipated revenue from Defitelio. Furthermore, after initial pricing and reimbursement approvals, reductions in prices and changes in reimbursement levels can be triggered by multiple factors, including reference pricing systems and publication of discounts by third party payors or authorities in other countries. In the EU, prices can be reduced further by parallel distribution and parallel trade, or arbitrage between low-priced and high-priced countries. If any of these events occurs, our anticipated revenue from Defitelio in the EU would be negatively affected. If we are unable to obtain and maintain favorable pricing and reimbursement approvals in European countries that represent significant markets, especially where a country's reimbursed price influences other countries, our anticipated revenue from and growth prospects for Defitelio in the EU could be negatively affected. In addition, our ability to commercialize Defitelio successfully in the U.S. will depend on, among other things, the continued availability of adequate coverage or reimbursement by U.S. government programs and third party payors.

The European Commission, or EC, granted marketing authorization to Defitelio under "exceptional circumstances" because it was not possible to obtain complete information about the product due to the rarity of the disease and because ethical considerations prevented conducting a study directly comparing Defitelio with best supportive care or a placebo. A marketing authorization granted under exceptional circumstances is subject to approval conditions and an annual reassessment of the risk-benefit balance by European Medicines Agency, or EMA. As a result, if we fail to meet the approval condition for Defitelio established by the EC, which requires that we set up a patient registry to investigate the long-term safety, health outcomes and patterns of utilization of Defitelio during normal use, or if it is determined that the balance of risks and benefits of using Defitelio changes materially, the EMA could vary, suspend or withdraw the marketing authorization for Defitelio. In addition, the FDA imposed several post-marketing commitments and requirements in connection with its approval of our NDA for Defitelio in March 2016, including the requirement that we conduct a clinical trial to analyze the safety of defibrotide versus best supportive care in the

prevention of VOD in adult and pediatric patients. We may be unable to comply with these or other post-marketing obligations imposed as part of the marketing approvals for Defitelio. If we fail to meet any of these post-marketing obligations, our sales of and revenues from Defitelio could be materially adversely affected, and our potential future maintenance and growth of the market for this product may be limited.

The size of the population of VOD patients who are indicated for treatment with Defitelio is limited, and changes in HSCT treatment protocols could reduce the incidence of VOD diagnosis. Changes in treatment protocols that reduce the incidence of VOD diagnosis could adversely affect our anticipated revenues from Defitelio and our business, financial condition, results of operations and growth prospects.

We are also assessing the potential for approval of defibrotide in other countries and for development of defibrotide in additional indications. We cannot know when, if ever, defibrotide will be approved in any other country or under what circumstances, and what, if any, additional clinical or other development activities will be required in order to potentially obtain such regulatory approval and the cost associated with such required activities, if any. If we fail to obtain approval for

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defibrotide in other countries or for new indications, or if any future approvals we receive are for narrower indications than we expect, our anticipated revenue from defibrotide and our growth prospects would be negatively affected.

Due to the limited amount of historical sales data from commercialization of Defitelio, our Defitelio sales will be difficult to predict from period to period. As a result, Defitelio sales results or trends in any period are not necessarily indicative of future performance. If sales of Defitelio do not reach the levels we expect, our anticipated revenue from Defitelio would be negatively affected, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

If we fail to maintain or increase prescriptions and revenue from sales of Xyrem, Erwinaze and Defitelio, our business, financial condition, results of operations and growth prospects could be materially adversely affected. We may choose to increase the price of our products, and price adjustments may negatively affect our sales volumes. Also, sales of each of our products may fluctuate significantly from quarter to quarter, depending on the number of patients receiving treatment, the availability of supply to meet the demand for the product, the dosing requirements of treated patients and other factors. The market price of our ordinary shares may decline if sales of our products do not continue or grow at the rates anticipated by financial analysts or investors.

In addition, if we fail to obtain approvals for certain of our marketed products in new indications or formulations, we will be unable to commercialize our products in new indications or formulations, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

Vyxeos

We made a significant investment in Vyxeos through the acquisition of Celator Pharmaceuticals, Inc., or Celator, which we refer to as the Celator Acquisition. Vyxeos is the first injectable fixed ratio, drug delivery combination oncology product based on the CombiPlex technology platform approved by the FDA and that we expect to be considered for approval by the EMA. On August 3, 2017, the FDA approved our NDA for Vyxeos for the treatment of adults with newly-diagnosed therapy-related acute myeloid leukemia, or AML, or AML with myelodysplasia-related changes. We are in the process of launching Vyxeos in the U.S. Subject to the successful completion of product testing for compliance with the final specifications included in the approved NDA, we expect to begin shipping Vyxeos in August 2017. In the event that our manufactured product does not comply with these specifications, our launch of Vyxeos would be delayed, which could have a material adverse effect on our business and results of operations.

We expect to submit a marketing authorization application, or MAA, for Vyxeos in Europe in the fourth quarter of 2017. We cannot predict whether we will be able to submit our MAA in a timely manner, if at all.

Our ability to realize the anticipated benefits from our investment in Vyxeos is subject to a number of additional risks and uncertainties, including:

- our ability to differentiate Vyxeos from other liposomal chemotherapies and generically available chemotherapy combinations with which physicians and treatment centers are more familiar;
- delays or problems in the supply or manufacture of the product, including the ability of the third parties upon which we rely to manufacture Vyxeos and its APIs to manufacture sufficient quantities in accordance with applicable specifications;
- the need to establish pricing and reimbursement support for Vyxeos in the U.S. or in other countries;
- the acceptance of Vyxeos in the U.S. and other countries by hospital pharmacy and therapeutics committees and the availability of adequate coverage and reimbursement by government programs and third party payors;
- the approval and use of new and novel compounds in AML that are only approved for use in combination with other agents and that have not been tested in combination with Vyxeos; and
- the limited size of the population of high-risk AML patients who may potentially be indicated for treatment with Vyxeos, particularly given the ongoing clinical trials by other companies with the same patient population.

Due to the lack of historical sales data from commercialization of Vyxeos, our Vyxeos sales will be difficult to predict from period to period. As a result, Vyxeos sales results or trends in any period may not necessarily be indicative of future performance. If sales of Vyxeos do not reach the levels we expect, or we are unable to obtain regulatory

approval for Vyxeos in Europe in a timely manner, or at all, our anticipated revenue from the product will be negatively affected, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

In addition, the FDA imposed several post-marketing commitments and requirements in connection with its approval of our NDA for Vyxeos, including the requirement that we conduct a safety study to characterize infusion-related reactions in patients treated with Vyxeos and a clinical trial to determine dosing to minimize toxicity in patients with moderate and severe renal impairment. In the event that we are unable to comply with these or other post-marketing obligations imposed as part of the marketing approval for Vyxeos, our sales of and revenues from Vyxeos could be materially adversely affected, and our potential future maintenance and growth of the market for this product may be limited.

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Product Candidates

In furtherance of our growth strategy, we have made significant investments in a number of product candidates. We recently announced positive efficacy results from our two Phase 3 clinical trials of JZP-110 in patients with excessive sleepiness, or ES, associated with obstructive sleep apnea, or OSA, and from our Phase 3 clinical trial of JZP-110 in patients with ES associated with narcolepsy. We are planning to submit an NDA to the FDA in late 2017 to seek approval for JZP-110 in the treatment of ES associated with OSA and ES associated with narcolepsy. We cannot predict whether we will be able to submit our NDA in a timely manner, if at all. If we are able to submit our NDA, we cannot predict whether our NDA will be approved by the FDA in a timely manner, if at all. It is possible that the FDA may ask an advisory committee, which provides the FDA with independent expert advice and recommendations, to review our NDA. The advisory committee may recommend against approval of our NDA, may recommend conditioning approval on our conducting one or more potentially time-consuming and costly clinical trials to provide supporting data either before approval or as a post-marketing commitment, or may recommend narrower or more restricted labeling than we may propose.

We also expect to submit NDAs to the FDA for two other products in our sleep therapeutic area: for JZP-507, an investigational new drug candidate with a 50% reduction in sodium content compared to Xyrem that in a pilot study has demonstrated bioequivalence to Xyrem, by the first quarter of 2018 and, subject to the results of an ongoing Phase 3 trial, for JZP-258, an investigational new drug candidate that contains 90% less sodium than Xyrem, in 2019. With respect to JZP-507, while we believe that we have a path to obtain the data necessary to complete our planned NDA submission for JZP-507 by the first quarter of 2018, we may not be able to generate sufficient data on our anticipated timing, or at all, or may be required to conduct more extensive studies than we currently anticipate, either of which could delay or prevent submission of an NDA.

Any failure or delay in completing necessary clinical trials and conducting other activities, including CMC activities, that are required to complete our planned NDA submissions and obtain regulatory approval could materially and adversely affect our business, financial condition, results of operations and growth prospects. See the discussion under the heading “Conducting clinical trials is costly and time-consuming, and the outcomes are uncertain. A failure to prove that our product candidates are safe and effective in clinical trials, or to generate data in clinical trials to support expansion of the therapeutic uses for our existing products, could materially and adversely affect our business, financial condition, results of operations and growth prospects” in this Part II, Item 1A for a discussion of risks related to our clinical trials of JZP-110 and other product candidates. See also the discussions under the headings “The loss of our single source suppliers, delays or problems in the supply of our products for commercial sale or our product candidates for use in our clinical trials, or our or our suppliers’ failure to comply with manufacturing regulations, could materially and adversely affect our business, financial condition, results of operations and growth prospects” and “The regulatory approval process is expensive, time-consuming and uncertain and may prevent us or our partners from obtaining approvals for the commercialization of some or all of our product candidates” in this Part II, Item 1A.

If we are unable to obtain regulatory approval for our product candidates in a timely manner, or at all, or if sales of an approved product do not reach the levels we expect, our anticipated revenue from our product candidates would be negatively affected, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

The loss of our single source suppliers, delays or problems in the supply of our products for commercial sale or our product candidates for use in our clinical trials, or our or our suppliers’ failure to comply with manufacturing regulations, could materially and adversely affect our business, financial condition, results of operations and growth prospects.

The manufacture of pharmaceutical products requires significant expertise and capital investment, including the development of process controls required to consistently produce the API and the finished product in sufficient quantities while meeting detailed product specifications on a repeated basis. We and our manufacturers may encounter difficulties in production, including difficulties with production costs and yields, process controls, quality control and quality assurance, including testing of stability, impurities and impurity levels and other product specifications by validated test methods, and compliance with strictly enforced U.S., state and non-U.S. regulations. These difficulties

can be heightened when we or our suppliers are required to produce finished product at commercial scale or to produce increased quantities to meet growing demand. In addition, we and our suppliers are subject to the FDA's current Good Manufacturing Practices, or cGMP, requirements, DEA regulations and other equivalent rules and regulations prescribed by non-U.S. regulatory authorities. If we or any of our suppliers encounter these or any other manufacturing, quality or compliance difficulties with respect to any of our products, we may be unable to obtain or maintain regulatory approval, or meet commercial demand, for such products, which could adversely affect our business, financial condition, results of operations and growth prospects.

We received FDA approval of our manufacturing and development facility in Athlone, Ireland in June 2016, and we commenced commercial operations at this facility in the third quarter of 2016. We are using this facility for the manufacture of Xyrem and development-stage products, including JZP-507 and JZP-258. However, other than our Athlone facility and our manufacturing plant in Italy where we produce the defibrotide drug substance, we currently do not have our own commercial manufacturing capability for our products, product candidates or their APIs, or packaging capability. As a result, our ability to

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develop and supply products in a timely and competitive manner depends primarily on third party suppliers being able to meet our ongoing commercial and clinical trial needs for API, other raw materials, packaging materials and finished products. In part due to the limited market size for our products and product candidates, we have a single source of supply for most of our marketed products, product candidates and their APIs. These single source arrangements put us at risk of interruption in supply in the event of manufacturing, quality or compliance difficulties at our suppliers.

Siegfried USA, LLC and its affiliates, or Siegfried, have been our sole supplier of sodium oxybate, the API for Xyrem, since 2012. Siegfried supplies sodium oxybate to our U.S.-based manufacturer of Xyrem and, through a Siegfried affiliate in Europe, to our Athlone facility. We expect that Siegfried will continue to be our sole supplier of sodium oxybate for the foreseeable future, and we cannot assure you that Siegfried can or will continue to supply on a timely basis, or at all, sufficient quantities of API to enable the manufacture of the quantities of Xyrem that we need.

Patheon Pharmaceuticals Inc., which we refer to together with its affiliates as Patheon, is our sole U.S.-based manufacturer and supplier of Xyrem. Although we have commenced manufacturing of Xyrem in our Athlone facility, we expect to rely on Patheon as our U.S.-based supplier of Xyrem for the foreseeable future, and we cannot assure you that Patheon can or will continue to supply on a timely basis, or at all, the quantities of Xyrem that we need from Patheon.

Sodium oxybate is a Schedule I controlled substance in the U.S. The DEA limits the quantity of Schedule I controlled substances that may be manufactured and procured in the U.S. in any given calendar year through a quota system and, as a result, quotas from the DEA are required to manufacture and procure sodium oxybate in the U.S. Accordingly, we require DEA quotas for Siegfried in the U.S. to manufacture sodium oxybate and for Patheon, our U.S.-based Xyrem supplier, to procure the sodium oxybate from Siegfried to manufacture and supply us with Xyrem. Because the DEA typically grants quotas on an annual basis, Siegfried and Patheon are required to request and justify allocation of sufficient annual DEA quotas, as well as any additional DEA quotas necessary if our commercial or clinical requirements exceed the allocated quotas throughout the year. For the last few years, our suppliers were allocated only a portion of the published annual aggregate quota for the API. If one or more ANDA filers were to begin manufacturing a generic sodium oxybate product, generic manufacturers would need to obtain a portion of the annual aggregate API quota, which could decrease the DEA quota allocation obtained on our behalf by Siegfried and Patheon. In the past, we have had to engage in lengthy efforts to obtain the needed quotas after the original annual quotas had first been allocated. The need for quotas has prevented us in the past, and may prevent us in the future, from building significant inventories. For 2017, both Siegfried and Patheon have been allocated most, but not all, of their respective requested quotas. If, in the future, we and our third party suppliers cannot obtain the quotas that are needed on a timely basis, or at all, our business, financial condition, results of operations and growth prospects could be materially and adversely affected.

Erwinaze is licensed from and manufactured for us by a single source, PBL, which is wholly owned by the U.K. Secretary of State for Health. The FDA’s approval of the BLA for Erwinaze includes a number of post-marketing commitments related to the manufacture of Erwinaze by PBL. We cannot predict if or when PBL will comply with its manufacturing-related post-marketing commitments that are part of the BLA approval. In March 2016, the FDA conducted an inspection of the PBL manufacturing facility and issued an FDA Form 483 to PBL that included observations related to a range of operational systems and processes. In April 2016 and September 2016, PBL responded to the FDA Form 483 with its plan, including required remediation activities, to address the observations, and subsequently provided additional information in response to another FDA request. In January 2017, the FDA issued a warning letter to PBL indicating that it was not satisfied with PBL’s response to the FDA Form 483, citing significant violations of cGMP for finished pharmaceuticals and significant deviations from cGMP for APIs. In March 2017, PBL filed a response to the warning letter with the FDA. We expect to attend a meeting with PBL and the FDA in the third quarter of 2017 to discuss the warning letter. We cannot predict if or when PBL will correct the violations and deviations to the satisfaction of the FDA or whether the FDA will be satisfied with PBL’s response to the warning letter. Any failure to do so to the satisfaction of the FDA could result in the FDA refusing admission of Erwinaze into the U.S., as well as additional enforcement actions by the FDA and other regulatory entities.

In the United Kingdom, or UK, where PBL's manufacturing facilities are located, PBL is subject to similar inspections conducted by the UK Medicines and Healthcare Products Regulatory Agency, or MHRA. Inability to comply with regulatory requirements of the FDA, the MHRA or other competent authorities in the EU member states in which Erwinaze is subject to marketing authorization could adversely affect Erwinaze supply, particularly in light of our extremely limited product inventory, and could result in: enforcement actions by the FDA, MHRA or other EU member states' competent authorities (including the issuance of the local equivalents of FDA Form 483s or warning letters); the approval of the FDA or other competent authorities being suspended, varied, or revoked; product release being delayed or suspended; or product being seized or recalled. Any of these actions could have a material adverse effect on our sales of, and revenues from, Erwinaze and limit our potential future maintenance and growth of the market for this product. In addition, if the FDA or any non-U.S. regulatory authority mandates any changes to the specifications for Erwinaze, we may face challenges having product produced to meet such specifications, and our supplier may increase its price to supply Erwinaze meeting such specifications, which may result in additional costs to us or a delay in supply and may decrease any profit we would otherwise achieve with Erwinaze.

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Moreover, the current manufacturing capacity for Erwinaze is completely absorbed by demand for the product. As a consequence of constrained manufacturing capacity, we have had an extremely limited or no ability to build product inventory levels that can be used to absorb supply disruptions resulting from quality, regulatory or other issues. We have experienced product quality, manufacturing and inventory challenges that have resulted, and may continue to result, in disruptions in our ability to supply certain markets, from time to time and have caused, and may in the future cause, us to implement batch-specific, modified product use instructions. Most recently, we experienced supply disruptions in the second quarter of 2017 in the U.S. and certain other countries, and we expect additional supply disruptions of Erwinaze in the U.S. and other countries in 2017. We cannot predict whether the required remediation activities in connection with the January 2017 warning letter will further strain manufacturing capacity and adversely affect Erwinaze supply, particularly in light of our extremely limited product inventory. As capacity constraints and supply disruptions continue, whether as a result of continued quality or other manufacturing issues, regulatory issues or otherwise, we will be unable to build a desired excess level of product inventory, our ability to supply the market may continue to be compromised and physicians' decisions to use Erwinaze have been, and may continue to be, negatively impacted.

If quality or other manufacturing issues or regulatory difficulties persist and result in a disruption to supply or capacity constraints, under our agreement with PBL, we do not have the right to engage a backup supplier for Erwinaze except in very limited circumstances, such as following the termination of the agreement by us due to the uncured material breach or the cessation of manufacturing by our supplier. If we are required to engage a backup or alternative supplier, the transfer of technical expertise and manufacturing process to the backup or alternative supplier would be difficult, costly and time-consuming, might not be successful and would increase the likelihood of a delay or disruption in manufacturing or a shortage of supply of Erwinaze. If we fail to obtain a sufficient supply of Erwinaze, our sales of and revenues from Erwinaze, our potential future maintenance and growth of the market for this product, and/or our business, financial condition, results of operations and growth prospects could be materially adversely affected.

We are our sole supplier of, and we believe that we are currently the sole worldwide producer of, the defibrotide drug compound. We manufacture the defibrotide compound in a single facility located in Villa Guardia, near Como, Italy. Patheon currently processes the defibrotide compound into its finished vial form, and Patheon is the sole provider of our commercial and clinical supply of Defitelio. In 2015, the FDA issued an FDA Form 483 to Patheon Italia that included observations related to the Ferentino, Italy facility that manufactures Defitelio. Although we are advised that Patheon Italia remediated the observations to the FDA's satisfaction, the FDA will continue to inspect and evaluate this facility for ongoing compliance with applicable requirements. If Patheon does not or is not able to supply us with Defitelio for any reason, it may take time and resources to implement and execute the necessary technology transfer to another processor, and such delay could negatively impact our anticipated revenues from Defitelio and could potentially cause us to breach contractual obligations with customers or to violate local laws requiring us to deliver the product to those in need.

In addition, the API in Defitelio is derived from porcine DNA. If our porcine DNA supplier experiences safety or other issues that impact its ability to supply porcine materials to us as needed, we may not be able to find alternative suppliers in a timely fashion, which could negatively impact our supply of Defitelio.

Vyxeos is manufactured using Celator's CombiPlex technology. CombiPlex products represent formulations with increased manufacturing complexities associated with producing drug delivery vehicles encapsulating two or more drugs that are maintained at a fixed ratio and, in the case of Vyxeos, two drugs that are co-encapsulated in a freeze-dried format. Vyxeos is manufactured by Baxter Oncology GmbH, or Baxter, which is a sole source supplier from a single site location. Baxter successfully manufactured batches that were used in Celator's completed Phase 3 clinical trial for Vyxeos, but Baxter has since experienced batch failures due to mechanical, component and other issues. While other contract manufacturers may be able to produce Vyxeos, the proprietary technology that supports the manufacture of Vyxeos is not easily transferable. Consequently, engaging an alternate manufacturer may be difficult, costly and time-consuming. If Baxter does not deliver sufficient quantities of Vyxeos in accordance with applicable specifications on a timely basis, whether due to batch failures or other delays, our ability to successfully commercialize Vyxeos and generate sales of this product at the level we expect could be materially and adversely

affected. See also the discussion under the heading “While Xyrem remains our largest product, our success also depends on our ability to effectively commercialize our other products and, in the case of our product candidates, our ability to obtain regulatory approval in the U.S. and Europe and, if approved, to successfully launch and commercialize those product candidates. Our inability to do so could have a material adverse effect on our business, financial condition, results of operations and growth prospects” in this Part II, Item 1A.

In addition, while the APIs in Vyxeos, daunorubicin and cytarabine, are available from a number of suppliers, certain suppliers have received warning letters from the FDA. As a result, we have qualified other suppliers for each API, and we provided the qualification data to the FDA. If the FDA restricts importation of API from either supplier, and we are unable to qualify API from additional suppliers in a timely manner, or at all, our ability to successfully commercialize Vyxeos and generate sales of this product at the level we expect could be materially and adversely affected.

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To conduct our ongoing and any future clinical trials of, complete marketing authorization submissions for, and potentially launch our other product candidates, we need to have sufficient quantities of product manufactured. For example, Siegfried has supplied us with both the API and finished product for our development activities involving JZP-110, including our Phase 3 clinical trials. We plan to have Siegfried manufacture and supply JZP-110 drug product for commercial sale should JZP-110 receive regulatory approval. Also, JZP-507 and JZP-258 are currently manufactured at our Athlone facility, and we expect to manufacture these products commercially at our Athlone facility should these candidates receive regulatory approval. However, there can be no assurance that we or our suppliers will be able to produce sufficient supplies of our product candidates in a timely manner or in accordance with applicable specifications. In addition, to obtain FDA approval of any product candidate, we or our supplier or suppliers for that product must obtain approval by the FDA to manufacture and supply product, in some cases based on qualification data provided to the FDA as part of our NDA submission. Any delay in generating, or failure to generate, data required in connection with submission of the CMC portions of any NDA could negatively impact our ability to meet our anticipated submission dates, and therefore our anticipated timing for obtaining FDA approval, or our ability to obtain FDA approval at all. In addition, any failure of us or a supplier to obtain approval by the FDA to manufacture and supply product or any delay in receiving, or failure to receive, adequate supplies of a product on a timely basis or in accordance with applicable specifications could negatively impact our ability to successfully launch and commercialize products and generate sales of products at the levels we expect.

Failure by us or our third party suppliers to comply with regulatory requirements could adversely affect our or their ability to supply products or ingredients. All facilities and manufacturing techniques used for the manufacture of pharmaceutical products must be operated in conformity with applicable cGMP requirements. DEA regulations also govern U.S. facilities where controlled substances such as sodium oxybate are manufactured. Our manufacturing facilities and manufacturing facilities of our suppliers have been and are subject to periodic unannounced inspection by the FDA, the EMA, the DEA, the Italian Health Authority and other regulatory authorities, including state authorities and similar authorities in other jurisdictions, to confirm compliance with cGMP and other requirements. We and our third party suppliers must continually expend time, money and effort in production, record keeping and quality assurance and control to ensure that our products and product candidates meet applicable specifications and other requirements for product safety, efficacy and quality. Failure to comply with applicable legal and regulatory requirements subjects us and our suppliers to possible legal or regulatory action, including restrictions on supply or shutdown, which may adversely affect our or a supplier's ability to supply the ingredients or finished products we need. Moreover, our or our third party suppliers' facilities could be damaged by fire, flood, earthquake, power loss, telecommunication and information system failure, terrorism or similar events. Any of these events could cause a delay or interruption in manufacturing and potentially a supply shortage of our products, which could negatively impact our anticipated revenues.

If, for any reason, our suppliers, including any new suppliers, do not continue to supply us with our products or product candidates in a timely fashion and in compliance with applicable quality and regulatory requirements, or otherwise fail or refuse to comply with their obligations to us under our supply and manufacturing arrangements, we may not have adequate remedies for any breach, and their failure to supply us could result in a shortage of our products or product candidates, which could adversely affect our business, financial condition, results of operations and growth prospects.

In addition, if one of our suppliers fails or refuses to supply us for any reason, it would take a significant amount of time and expense to qualify a new supplier. The FDA and similar international regulatory bodies must approve manufacturers of the active and inactive pharmaceutical ingredients and certain packaging materials used in our products. The loss of one of our suppliers could require us to obtain regulatory clearance in the form of a "prior approval supplement" and to incur validation and other costs associated with the transfer of the API or product manufacturing process. We believe that it could take up to two years, or longer in certain cases, to qualify a new supplier, and we may not be able to obtain APIs or finished products from new suppliers on acceptable terms and at reasonable prices, or at all. If there are delays in qualifying new suppliers or facilities or a new supplier is unable to obtain a sufficient quota from the DEA, if required, or to otherwise meet FDA or similar international regulatory

body's requirements for approval, there could be a shortage of the affected products for the marketplace or for use in clinical studies, or both, particularly since we do not have secondary sources for supply and manufacture of the APIs for our products or backup suppliers for our finished products.

Our ability to develop and deliver products in a timely and competitive manner depends on our third party suppliers being able to continue to meet our ongoing commercial needs. Any delay in supplying, or failure to supply, products or product candidates by any of our suppliers could result in our inability to meet the commercial demand for our products, or our needs for use in clinical trials, and could adversely affect our business, financial condition, results of operations and growth prospects.

We have substantially expanded our international footprint and operations, and we may expand further in the future, but we do not yet have substantial historical experience in international markets and may not achieve the results that we, our shareholders or analysts who cover our business expect.

We are headquartered in Dublin, Ireland and have multiple offices in the U.S., the UK, Italy and other countries in Europe. Our headcount has grown to approximately 1,110 as of August 2017. This includes employees in 14 countries in

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North America and Europe, a European commercial presence, a complex distribution network for products in Europe and additional territories, and manufacturing facilities in Italy and Ireland. In addition, we may expand our international operations into other countries in the future, either organically or by acquisition. While we have acquired significant management and other personnel with substantial international experience, conducting our business in multiple countries subjects us to a variety of risks and complexities that may materially and adversely affect our business, results of operations, financial condition and growth prospects, including, among other things:

- the increased complexity and costs inherent in managing international operations;
- diverse regulatory, financial and legal requirements, and any future changes to such requirements, in one or more countries where we are located or do business;
- country-specific tax, labor and employment laws and regulations;
- applicable trade laws, tariffs, export quotas, custom duties or other trade restrictions and any changes to them;
- challenges inherent in efficiently managing employees in diverse geographies, including the need to adapt systems, policies, benefits and compliance programs to differing labor and other regulations, as well as maintaining positive interactions with unionized employees in one of our international locations;
- liabilities for activities of, or related to, our international operations, products or product candidates;
- changes in currency rates; and
- regulations relating to data security and the unauthorized use of, or access to, commercial and personal information.

As a result of our rapid growth, our business and corporate structure has become substantially more complex. There can be no assurance that we will effectively manage the increased complexity without experiencing operating inefficiencies or control deficiencies. Significant management time and effort is required to effectively manage the increased complexity of our company, and our failure to successfully do so could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

In recent years, the global economy has been impacted by the effects of an ongoing global financial crisis, including the European sovereign debt crisis, which has caused extreme disruption in the financial markets, including severely diminished liquidity and credit availability. In addition, we expect to continue to grow our product sales in Europe. Continuing worldwide economic instability, including challenges faced by the Eurozone and certain of the countries in Europe and the ongoing budgetary difficulties faced by a number of EU member states, including Greece and Spain, has led and may continue to lead to substantial delays in payment and payment partially with government bonds rather than cash for medicinal drug products, which could negatively impact our revenues and profitability.

In addition, in June 2016, eligible members of the electorate in the UK decided by referendum to leave the EU. On March 29, 2017, the government of the UK initiated the formal procedure for withdrawal from the EU. We have a significant office in Oxford, England, which focuses on commercialization of our products outside of the U.S., among other activities. We do not know to what extent, or when, the UK's withdrawal from the EU or any other future changes to membership in the EU will impact our business, if at all. In particular, our ability to conduct international business out of the UK may be adversely affected. For a further discussion, see the risks under the heading "The results of the UK's referendum on withdrawal from the EU may have a negative effect on global economic conditions, financial markets and our business" in this Part II, Item 1A.

The commercial success of our products depends upon their market acceptance by physicians, patients, third party payors and the medical community.

If physicians do not prescribe our products, we cannot generate the revenues we anticipate from product sales. Market acceptance of any of our products by physicians, patients, third party payors and the medical community depends on:

- the clinical indications for which a product is approved and any restrictions placed upon the product in connection with its approval, such as a REMS, patient registry requirements or labeling restrictions;
- the prevalence of the disease or condition for which the product is approved and its diagnosis;
- the severity of side effects;
- acceptance by physicians and patients of each product as a safe and effective treatment;
- availability of sufficient product inventory to meet demand, particularly with respect to Erwinaze;

- physicians' decisions relating to treatment practices based on availability of product inventory, particularly with respect to Erwinaze;
- perceived advantages over alternative treatments;
- relative convenience and ease of administration;
- with respect to Xyrem, physician and patient assessment of the burdens associated with obtaining or maintaining the certifications required under the Xyrem REMS;
- the cost of treatment in relation to alternative treatments, including generic products;
- the extent to which the product is approved for inclusion on formularies of hospitals and managed care organizations;
- the conditions for reimbursement required by, and appropriate pricing and availability of reimbursement from, third party payors; and
- the availability of financial or other assistance for patients who are uninsured or underinsured.

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Because of our dependence upon market acceptance of our products, any adverse publicity associated with harm to patients or other adverse events resulting from the use or misuse of our products or any similar products distributed by other companies, including generic versions of our products, could materially and adversely affect our business, financial condition, results of operations and growth prospects. For example, from time to time, there is negative publicity about illicit gamma-hydroxybutyrate, or GHB, and its effects, including with respect to illegal use, overdoses, serious injury and death. Because sodium oxybate, the API in Xyrem, is a derivative of GHB, Xyrem sometimes also receives negative mention in publicity relating to GHB. Patients, physicians and regulators may therefore view Xyrem as the same as or similar to illicit GHB. In addition, there are regulators and some law enforcement agencies that oppose the prescription and use of Xyrem generally because of its connection to GHB. Xyrem's label includes information about adverse events from GHB. Moreover, a sodium oxybate distribution system that is less restrictive than the Xyrem REMS, such as the generic sodium oxybate REMS approved by the FDA in January 2017, may increase the risks associated with sodium oxybate distribution, as patients, consumers and others may not differentiate generic sodium oxybate from Xyrem, or differentiate between the different REMS programs. Any negative outcomes, including but not limited to risks to the public, caused by or otherwise related to the separate generic sodium oxybate REMS could have a significant negative impact in terms of product liability, goodwill, and prescribers' willingness to prescribe, and patients' willingness to take, Xyrem, any of which could have a material adverse effect on our Xyrem revenues.

In addition, we have periodically increased the price of Xyrem and may do so again in the future. We also have made and may in the future make similar price increases on our other products. Price increases on our products and negative publicity regarding pricing and price increases generally, whether on our products or products distributed by other pharmaceutical companies, could negatively affect market acceptance of our products. For additional discussion about payor acceptance, see the risk factor under the heading "Price approvals and reimbursement may not be available for our products, which could diminish our sales or affect our ability to sell our products profitably" in this Part II, Item 1A.

We may not be able to successfully identify and acquire, in-license or develop additional products or product candidates to grow our business, and, even if we are able to do so, we may not be able to successfully manage the risks associated with integrating any products or product candidates we may acquire in the future into our product portfolio, or we may otherwise fail to realize the anticipated benefits of these acquisitions.

We intend to grow our business over the long term by acquiring or in-licensing and developing additional products and product candidates that we believe have significant commercial potential. Future growth through acquisition or in-licensing will depend upon the availability of suitable products and product candidates for acquisition or in-licensing on acceptable prices, terms and conditions.

Even if appropriate opportunities are available, we may not be able to successfully identify them, or we may not have the financial resources necessary to pursue them. Other companies, many of which may have substantially greater financial, marketing and sales resources, compete with us for these opportunities. In order to compete successfully to acquire attractive products or product candidates in the current business climate, we may have to pay higher prices for assets than may have been paid historically, which may make it more difficult for us to realize an adequate return on any acquisition.

Even if we are able to successfully identify and acquire, in-license or develop additional products or product candidates, we cannot assure you that we will be able to successfully manage the risks associated with integrating any products or product candidates or the risks arising from anticipated and unanticipated problems in connection with an acquisition or in-licensing. We may not be able to realize the anticipated benefits of any acquisition or in-licensing for a variety of reasons, including if:

- we are unable to obtain and maintain adequate funding to complete the development of, obtain regulatory approval for and commercialize an acquired product candidate;
- a product candidate proves not to be safe or effective in later clinical trials;
- a product fails to reach its forecasted commercial potential as a result of pricing pressures or for any other reason;
- we experience negative publicity regarding actual or potential future price increases for that product or otherwise; or

- the integration of a product or product candidate gives rise to unforeseen difficulties and expenditures.

Any failure to identify and manage these risks and uncertainties effectively would have a material adverse effect on our business.

For example, in July 2016 we made a substantial investment in Celator through the Celator Acquisition. The aggregate consideration for the Celator Acquisition was $1.5 billion. The Celator Acquisition broadened our hematology/oncology portfolio with the acquisition of worldwide development and commercialization rights to Vyxeos. The FDA approved our NDA for Vyxeos in the U.S. on August 3, 2017, and we plan to make a regulatory submission in Europe in the fourth quarter of 2017. If we are unable to obtain regulatory approval for Vyxeos in Europe in a timely manner, or at all, or if sales of Vyxeos in the U.S. and in Europe following regulatory approval do not reach the levels we expect, our anticipated revenue from the product would be negatively affected, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects. See also the discussion under the heading “While Xyrem remains our largest product, our success also depends on our ability to effectively commercialize our other products and, in the case of our product candidates,

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our ability to obtain regulatory approval in the U.S. and Europe and, if approved, to successfully launch and commercialize those product candidates. Our inability to do so could have a material adverse effect on our business, financial condition, results of operations and growth prospects" in this Part II, Item 1A.

In addition, product and product candidate acquisitions create other uncertainties and risks, particularly when the acquisition takes the form of a merger or other business consolidation, such as the Celator Acquisition. Our business acquisitions have required, and any similar future transactions will also require, significant efforts and expenditures, including with respect to transition activities and integrating the acquired business with our historical business. We may encounter unexpected difficulties, or incur unexpected costs, in connection with potential acquisitions and similar transactions, which include:

- high acquisition costs;
- the need to incur substantial debt or engage in dilutive issuances of equity securities to pay for acquisitions;
- the potential disruption of our historical core business;
- the strain on, and need to continue to expand, our existing operational, technical, financial and administrative infrastructure;
- the difficulties in assimilating employees and corporate cultures;
- the failure to retain key managers and other personnel;
- the challenges in controlling additional costs and expenses in connection with and as a result of any acquisition;
- the need to write down assets or recognize impairment charges;
- the diversion of our management's attention to integration of operations and corporate and administrative infrastructures; and
- any unanticipated liabilities for activities of or related to the acquired business or its operations, products or product candidates.

If any of these or other factors impair our ability to integrate or otherwise manage an acquired business efficiently and successfully, we may be required to spend time or money on integration activities that otherwise would be spent on the development and expansion of our business. Resulting operating inefficiencies could increase costs and expenses more than we planned, could negatively impact the market price of our ordinary shares and could otherwise distract us from the execution of our strategy. Failure to maintain effective financial controls and reporting systems and procedures during and after integration of an acquired business could also impact our ability to produce timely and accurate financial statements.

Conducting clinical trials is costly and time-consuming, and the outcomes are uncertain. A failure to prove that our product candidates are safe and effective in clinical trials, or to generate data in clinical trials to support expansion of the therapeutic uses for our existing products, could materially and adversely affect our business, financial condition, results of operations and growth prospects.

Since 2014, we have made significant investments into expanding our product development pipeline and expect to continue to increase our research and development organization. Significant clinical, development and financial resources will be required to progress product candidates through clinical trials and the regulatory approval process to develop them into commercially viable products. We have a number of product candidates under development. We also intend to pursue clinical development of other product candidates that we may acquire or in-license in the future. Any failure or delay in completing clinical trials for our product candidates would prevent or delay the commercialization of our product candidates, which could materially and adversely affect our business, financial condition, results of operations and growth prospects.

As a condition to regulatory approval, each product candidate must undergo extensive and expensive preclinical studies and clinical trials to demonstrate to a statistically significant degree that the product candidate is safe and effective. The results at any stage of the development process may lack the desired safety, efficacy or pharmacokinetic characteristics. Results of limited preclinical studies, including studies of our product candidates in animal models, may not predict the results of human clinical trials of those product candidates. Similarly, results from early clinical trials may not be predictive of results obtained in later and larger clinical trials, and product candidates in later clinical trials may fail to show the desired safety and efficacy despite having progressed successfully through initial clinical

testing. In that case, the FDA or any equivalent non-U.S. regulatory agency may determine our data is not sufficiently compelling to warrant marketing approval and may require us to engage in additional clinical trials or provide further analysis which may be costly and time-consuming. A number of companies in the pharmaceutical industry, including us, have suffered significant setbacks in clinical trials, even in advanced clinical trials after showing positive results in preclinical studies or earlier clinical trials. If a product candidate fails at any stage of development and does not receive regulatory approval, we will not be able to commercialize it and receive any return on our investment in that product candidate.

Although we received positive results from our two Phase 3 clinical trials of JZP-110 in patients with ES associated with OSA and our Phase 3 clinical trial of JZP-110 in patients with ES associated with narcolepsy, if we submit an NDA to the FDA for approval and the FDA determines that our safety or efficacy data do not warrant marketing approval, we may be required to

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conduct additional clinical trials, which could be costly and time-consuming, or we may not be able to commercialize JZP-110, in which event we would not receive any return on our investment.

Our development pipeline projects may not be successful, and any adverse events or other information generated during the course of studies related to existing products could result in action by the FDA or a non-U.S. regulatory agency, which may restrict our ability to sell, or adversely affect sales of, currently marketed products, or such events or other information could otherwise have a material adverse effect on a related commercial product. Any failure or delay in completing clinical trials for line extensions or the generation of additional clinical data could materially and adversely affect the maintenance and growth of the markets for the related marketed products, which could adversely affect our business, financial condition, results of operations and overall growth prospects.

In addition to issues relating to the results generated in clinical trials, clinical trials can be delayed or halted for a variety of reasons, including:

- delays or failures in obtaining regulatory authorization to commence a trial because of safety concerns of regulators relating to our product candidates or similar product candidates of our competitors or failure to follow regulatory guidelines;
- delays or failures in obtaining clinical materials and manufacturing sufficient quantities of the product candidate for use in trials;
- delays or failures in reaching agreement on acceptable terms with prospective study sites;
- delays or failures in obtaining approval of our clinical trial protocol from an institutional review board, also known as an ethics committee in Europe, to conduct a clinical trial at a prospective study site;
- delays or failures in recruiting patients to participate in a clinical trial;
- failure of our clinical trials and clinical investigators to be in compliance with the FDA and other regulatory agencies' requirements, commonly referred to as good clinical practices;
- unforeseen safety issues, including negative results from ongoing preclinical studies and clinical trials and adverse events associated with product candidates;
- inability to monitor patients adequately during or after treatment;
- difficulty monitoring multiple study sites;
- difficulty identifying or enrolling eligible patients, in some cases based on the number of clinical trials with enrollment criteria targeting the same patient population;
- failure of our third party clinical trial managers to satisfactorily perform their contractual duties, comply with regulations or meet expected deadlines; or
- insufficient funds to complete the trials.

We rely on third parties to conduct our clinical trials, and if they do not properly and successfully perform their legal and regulatory obligations, as well as their contractual obligations to us, we may not be able to obtain regulatory approvals for our product candidates.

We rely on contract research organizations and other third parties to assist us in designing, managing, monitoring and otherwise carrying out our clinical trials, including with respect to site selection, contract negotiation and data management. We do not control these third parties, and, as a result, they may not treat our clinical studies as a high priority, or in the manner in which we would prefer, which could result in delays. We are responsible for confirming that each of our clinical trials is conducted in accordance with its general investigational plan and protocol, as well as good clinical practices, for conducting, recording and reporting the results of clinical trials to ensure that the data and results are credible and accurate and that the trial participants are adequately protected. The FDA and non-U.S. regulatory agencies enforce good clinical practices through periodic inspections of trial sponsors, principal investigators and trial sites. If we, contract research organizations or other third parties assisting us or our study sites fail to comply with applicable good clinical practices, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or its non-U.S. counterparts may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that, upon inspection, the FDA or non-U.S. regulatory agencies will determine that any of our clinical trials comply with good clinical practices. In addition, our clinical

trials must be conducted with product produced under the FDA's cGMP regulations and similar regulations outside of the U.S. Our failure, or the failure of our product suppliers, to comply with these regulations may require us to repeat or redesign clinical trials, which would delay the regulatory approval process.

If third parties do not successfully carry out their duties under their agreements with us, if the quality or accuracy of the data they obtain is compromised due to failure to adhere to our clinical protocols, including dosing requirements, or regulatory requirements, or if they otherwise fail to comply with clinical trial protocols or meet expected deadlines, our clinical trials may not meet regulatory requirements. If our clinical trials do not meet regulatory requirements or if these third parties need to be replaced, our clinical trials may be extended, delayed, suspended or terminated. If any of these events occur, we may not be able to obtain regulatory approval of our product candidates or succeed in our efforts to create approved line extensions for certain of our existing products or generate additional useful clinical data in support of these products.

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We face substantial competition from other companies, including companies with greater resources, including larger sales organizations and more experience working with large and diverse product portfolios, than we have.

The commercial potential of our current products and any future products may be reduced or eliminated if our competitors develop or acquire and commercialize generic or branded products that are safer or more effective, have fewer side effects, are easier to administer or are less expensive than our products. The pharmaceutical industry is highly competitive and dominated by a number of large, established pharmaceutical companies, as well as specialty pharmaceutical companies that market products and develop product candidates in sleep, hematology/oncology, pain and other therapeutic areas. Many of our competitors, particularly large pharmaceutical and life sciences companies, have substantially greater financial, operational and human resources than we do. They can spend more on, and have more expertise in, research and development, regulatory, manufacturing, distribution and sales activities. As a result, our competitors may obtain FDA or other regulatory approvals for their product candidates more rapidly than we may and may market their products more effectively than we do. Smaller or earlier stage companies may also prove to be significant competitors, particularly through focused development programs and collaborative arrangements with large, established companies.

While Xyrem is the only product approved by the FDA and currently marketed in the U.S. for the treatment of both cataplexy and EDS in patients with narcolepsy, cataplexy is often treated with tricyclic antidepressants and selective serotonin reuptake inhibitors or selective norepinephrine reuptake inhibitors, even though these products are not approved by the FDA for the treatment of cataplexy. Other treatments for EDS in patients with narcolepsy include stimulants and wakefulness promoting agents, such as Provigil® (modafinil) and Nuvigil® (armodafinil), as well as generic versions of Provigil, the only other products both approved by the FDA and currently marketed for the treatment of EDS in patients with narcolepsy. Provigil, its generic equivalents and Nuvigil are also approved for improving wakefulness in patients with EDS associated with treated OSA or shift work disorder.

We are also aware of products being developed by others for use as treatment options in cataplexy and/or EDS in patients with narcolepsy, including a product to treat adult patients with narcolepsy with or without cataplexy that received marketing approval in Europe in 2016. While this product is currently not approved by the FDA for marketing in the U.S. or, to our knowledge, subject to a pending application for such approval, the receipt of marketing approval and commercialization of this product in the U.S. for the treatment of narcolepsy could, depending on the targeted patient population, negatively impact our ability to maintain and grow sales of Xyrem.

The FDA has approved or tentatively approved ANDAs seeking to market generic versions of Xyrem, and we believe that it is likely that the FDA will approve or tentatively approve additional ANDAs. In addition, in connection with our settlement agreement with West-Ward in April 2017, we granted West-Ward the right to sell the West-Ward AG Product commencing on January 1, 2023, or earlier under certain circumstances, and granted West-Ward a license to launch its generic sodium oxybate product as early as six months thereafter. Other companies could also develop products that are similar, but not identical, to Xyrem, such as an alternative formulation or an alternative formulation combined with a different delivery technology, and seek approval in the U.S. by referencing Xyrem and relying, to some degree, on the FDA's approval of Xyrem and related determinations of safety and efficacy. For example, Avadel has stated that it is conducting a Phase 3 pivotal trial pursuant to an FDA-approved special protocol assessment, and has indicated that it intends to seek approval of its product candidate using a Section 505(b)(2) NDA approval pathway, which allows companies to seek approval of a product that is similar, but not identical, to a previously-approved brand-name product. If Avadel successfully develops, obtains FDA approval of and launches this product candidate, we expect that the launch of the approved product would compete with Xyrem and could result in a substantial reduction of Xyrem net sales, which could have the additional negative effect of potentially triggering acceleration of market entry of the West-Ward AG Product or West-Ward's own generic sodium oxybate product.

We expect that the launch of any generic version of Xyrem, including the West-Ward AG Product or other authorized generic version of Xyrem, or the approval and launch of other products that compete with Xyrem, could have a material adverse effect on our sales of Xyrem and on our business, financial condition, results of operations and growth prospects. For further discussion regarding the risks associated with the West-Ward settlement agreement, the tentative approval of the Amneal and Ohm ANDAs, potential approval or tentative approval of additional ANDAs, the

potential launch of a generic version of Xyrem, or the approval and launch of other sodium oxybate or other products that compete with Xyrem, as well as other risks and challenges we face with respect to Xyrem, see the risk factors under the headings “Risks Related to Xyrem and the Significant Impact of Xyrem Sales” and “Risks Related to Our Intellectual Property” in this Part II, Item 1A.

While there is currently no direct competition to Erwinaze to treat ALL patients with hypersensitivity to E. coli-derived asparaginase, other companies have developed or are developing new treatments for ALL, including new asparaginase treatments that could reduce the rate of hypersensitivity in patients with ALL, and new treatment protocols are being developed for ALL that may not include asparaginase-containing regimens. For example, a number of companies are developing new immunotherapy treatments for relapsed or refractory ALL patients, including one treatment that was recently approved. The development of these new treatments could negatively impact our ability to maintain and grow sales of Erwinaze in patient populations where the benefit of an asparaginase-containing regimen is not well established.

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With respect to Vyxeos, AML, a cancer indication for which we have begun to commercialize Vyxeos, has established therapies. A key consideration in the treatment of AML patients is the patient's suitability for chemotherapy. The patient population studied in the Vyxeos Phase 3 clinical trial included AML patients deemed able to tolerate chemotherapy. There are existing options for the treatment of newly-diagnosed AML patients who can tolerate chemotherapy, such as cytarabine in combination with an anthracycline (i.e., daunorubicin), known as 7+3. In addition, we are aware of several other products that have been recently approved by the FDA or are in development for use as treatment options for AML patients, such as targeted agents (FLT-3, IDH-1, IDH-2, CD-33, CAR T cell). Some of the patient populations being studied for, or treated by, these products overlap with the patient population studied in the Vyxeos Phase 3 clinical trial. The existence of established treatment options and the development of competing products for the treatment of newly-diagnosed therapy-related AML or AML with myelodysplasia-related changes could negatively impact our ability to successfully commercialize Vyxeos and achieve the level of sales we expect, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

In addition, many of our competitors are able to deploy more personnel to market and sell their products than we do. We currently have a relatively small number of sales representatives compared with the number of sales representatives of most other pharmaceutical companies with marketed products. Each of our sales representatives is responsible for a territory of significant size. The continued growth of our current products and the launch of any future products may require expansion of our sales force and sales support organization, and we may need to commit significant additional funds, management and other resources to the growth of our sales organization. We may not be able to achieve any necessary growth in a timely or cost-effective manner or realize a positive return on our investment, and we may not have the financial resources to achieve the necessary growth in a timely manner, or at all. In particular, we compete with a significant number of pharmaceutical and life sciences companies with extensive sales, marketing and promotional experience in hematology/oncology markets, and our failure to compete effectively in this area could negatively affect our sales of Erwinaze, Defitelio and other products. We also have to compete with other pharmaceutical and life sciences companies to recruit, hire, train and retain sales and marketing personnel, and turnover in our sales force and marketing personnel could negatively affect sales of our products. If our specialty sales force and sales organization are not appropriately sized to adequately promote any current or potential future products, the commercial potential of our current products and any future products may be diminished.

We also face competition, and may in the future face additional competition, from manufacturers of generic drugs, including in connection with the FDA's recent approval and tentative approvals of generic versions of Xyrem, and the potential launch of such generic versions of Xyrem and/or the West-Ward AG Product. Generic competition often results in decreases in the prices at which branded products can be sold, particularly when there is more than one generic available in the marketplace. In addition, legislation enacted in the U.S. allows for, and in some instances in the absence of specific instructions from the prescribing physician mandates, the dispensing of generic products rather than branded products where a generic version is available. Other companies could also develop products that are similar, but not identical, to our marketed products, such as an alternative formulation of our product or an alternative formulation combined with a different delivery technology, and seek approval in the U.S. by referencing our products and relying, to some degree, on the FDA's finding that our products are safe and effective. For more information, see the risk factor under the heading "The launch of a generic version of Xyrem or other sodium oxybate products that compete with Xyrem would adversely affect sales of Xyrem" in this Part II, Item 1A.

Our products and product candidates may also compete in the future with new products currently under development by others. Any products that we develop are likely to be in a highly competitive market, and many of our competitors may succeed in developing products that may render our products obsolete or noncompetitive.

Our ability to continue to grow further requires that we compete successfully with specialty pharmaceutical companies for product and product candidate acquisition and in-licensing opportunities. These competitors include established companies that may have a competitive advantage over us due to their size and financial resources.

We cannot predict whether historical revenues from named patient programs for our hematology/oncology products will continue or whether we will be able to continue to distribute those products on a named patient basis.

In certain European countries, reimbursement for products that have not yet received marketing authorization may be provided through national named patient programs. Erwinase and Defitelio are available on a named patient basis in many countries where they are not commercially available. Such reimbursement may cease to be available if authorization for a named patient program expires or is terminated. While we generate revenue from the distribution of these products through named patient programs, we cannot predict whether historical revenues from these programs will continue, whether we will be able to continue to distribute our products on a named patient basis in these countries, whether we will be able to commercialize our products in countries where the products have historically been available on a named patient basis, or whether commercial revenues will exceed revenues historically generated from sales on a named patient basis. Any failure to maintain revenues from sales of Erwinase and/or Defitelio on a named patient basis and/or to generate revenues from commercial sales of these products exceeding historical sales on a named patient basis could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

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If we fail to attract, retain and motivate key personnel or to retain the members of our executive management team, our operations and our future growth may be adversely affected.

Our success and our ability to grow depend in part on our continued ability to attract, retain and motivate highly qualified personnel and on our ability to develop and maintain important relationships with leading academic institutions, clinicians and scientists. We are highly dependent upon our executive management team and other critical personnel, all of whom work on many complex matters that are essential to our success. We do not carry "key person" insurance. The loss of services of one or more members of our executive management team or other key personnel could delay or prevent the successful completion of some of our vital activities. Any employee may terminate his or her employment at any time without notice or with only short notice and without cause or good reason. The resulting loss of institutional knowledge may negatively impact our operations and future growth.

In addition, to grow our company we will need additional personnel. Competition for qualified personnel in the pharmaceutical industry is very intense. If we are unable to attract, retain and motivate quality individuals, including in our research and development operations, which are continuing to expand, our business, financial condition, results of operations and growth prospects could be adversely affected.

We also depend on the unique abilities, industry experience and institutional knowledge of the members of our board of directors to efficiently set company strategy and effectively guide our executive management team. We cannot be certain that future board turnover will not negatively affect our business.

Significant disruptions of information technology systems or data security breaches could adversely affect our business.

We are increasingly dependent on information technology systems and infrastructure, including mobile technologies, to operate our business. In the ordinary course of our business, we collect, store and transmit large amounts of confidential information, including intellectual property, proprietary business information and personal information. It is critical that we do so in a secure manner to maintain the confidentiality and integrity of such confidential information. We have also outsourced elements of our operations (including elements of our information technology infrastructure) to third parties, and as a result we manage a number of third party vendors who may or could have access to our confidential information. The size and complexity of our information technology systems, and those of third party vendors with whom we contract, and the large amounts of confidential information stored on those systems, make such systems potentially vulnerable to service interruptions or to security breaches from inadvertent or intentional actions by our employees, third party vendors, and/or business partners, or from cyber-attacks by malicious third parties. Cyber-attacks are increasing in their frequency, sophistication and intensity. Cyber-attacks could include the deployment of harmful malware, denial-of-service attacks, social engineering and other means to affect service reliability and threaten the confidentiality, integrity and availability of information. From time to time, our systems have been subject to cyber-attacks.

Significant disruptions of our information technology systems or security breaches could adversely affect our business operations and/or result in the loss, misappropriation, and/or unauthorized access, use or disclosure of, or the prevention of access to, confidential information (including trade secrets or other intellectual property, proprietary business information and personal information), and could result in financial, legal, business and reputational harm to us. Any such event that leads to unauthorized access, use or disclosure of personal information, including personal information regarding our patients or employees, could harm our reputation, compel us to comply with federal and/or state breach notification laws and foreign law equivalents, subject us to mandatory corrective action, require us to verify the correctness of database contents and otherwise subject us to liability under laws and regulations that protect the privacy and security of personal information, which could disrupt our business, result in increased costs or loss of revenue, and/or result in significant legal and financial exposure. In addition, security breaches and other inappropriate access can be difficult to detect, and any delay in identifying them may lead to increased harm of the type described above. Moreover, the prevalent use of mobile devices to access confidential information increases the risk of security breaches. While we have implemented security measures to protect our information technology systems and infrastructure, there can be no assurance that such measures will prevent service interruptions or security breaches that could adversely affect our business.

The results of the UK’s referendum on withdrawal from the EU may have a negative effect on global economic conditions, financial markets and our business.

On March 29, 2017, the government of the UK initiated the formal procedure for withdrawal from the EU. The procedure involves a two-year negotiation period in which the UK and the EU must conclude an agreement setting out the terms of the UK's withdrawal and the arrangements for the UK's future relationship with the EU. This negotiation period could be extended by a unanimous decision of the European Council in agreement with the UK.

The referendum has created significant uncertainty concerning the future relationship between the UK and the EU. This includes the laws and regulations that will apply as the UK determines which EU laws to replace or replicate in the event of a withdrawal. From a regulatory perspective, the UK's withdrawal could result in significant complexity and risks. The tax consequences of the UK’s withdrawal from the EU are uncertain as well.

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The UK referendum has also given rise to calls for the governments of other EU member states to consider withdrawal from the EU. These developments, or the perception that they could occur, have had and may continue to have a material adverse effect on global economic conditions and the stability of global financial markets. They may significantly reduce global market liquidity and restrict the ability of key market participants to operate in certain financial markets.

We have a significant office in Oxford, England, which focuses on commercialization of our products outside of the U.S., among other activities. We do not know to what extent, or when, the UK's withdrawal from the EU or any other future changes to membership in the EU will impact our business, if at all. In particular, our ability to conduct international business out of the UK may be adversely affected. For a further discussion, see the risks under the headings "We have substantially expanded our international footprint and operations, and we may expand further in the future, but we do not yet have substantial historical experience in international markets and may not achieve the results that we, our shareholders or analysts who cover our business expect" and "The regulatory approval process is expensive, time-consuming and uncertain and may prevent us or our partners from obtaining approvals for the commercialization of some or all of our product candidates" in this Part II, Item 1A.

Risks Related to Our Intellectual Property

It is difficult and costly to protect our proprietary rights, and we may not be able to ensure their protection.

Our commercial success depends in part on obtaining and maintaining patent protection of our products and product candidates and their use and the methods used to manufacture and distribute them, as well as successfully defending these patents against third party challenges, and successfully protecting our trade secrets. Our ability to protect our products and product candidates from unauthorized making, using, selling, offering to sell or importation by third parties depends on the extent to which we have rights under valid and enforceable patents or have trade secrets that cover these activities. We cannot be certain that any of our patent applications, or those of our licensors, will result in issued patents, that the patents we own and license, or any additional patents we may own or license, will prevent other companies from developing similar or therapeutically equivalent products, or that others will not be issued patents that may prevent the sale of our products or require licensing and the payment of significant fees or royalties. The patent position of pharmaceutical companies can be highly uncertain and involve complex and often changing legal, regulatory and factual questions. We own a portfolio of U.S. and non-U.S. patents and patent applications and have licensed rights to a number of issued patents and patent applications that cover or relate to our products and product candidates, including Xyrem, Defitelio and Vyxeos. Changes in either the patent laws or in interpretations of patent laws in the U.S. and other countries may diminish the value of our intellectual property. Even if we are able to obtain patents covering our products and product candidates, any patent may be challenged, invalidated, held unenforceable or circumvented, potentially including by FDA approval of an ANDA that avoids infringement of our intellectual property.

Although Xyrem is covered by patents covering its formulation, distribution system and method of use, third parties are seeking to introduce generic versions of Xyrem, and additional third parties may also attempt to invalidate or design around the patents, or assert that they are invalid or otherwise unenforceable, and seek to introduce generic versions of Xyrem or other sodium oxybate products for treatment of cataplexy and/or EDS in narcolepsy. Notwithstanding our patents, and settlement agreements licensing those patents as of future dates, it is possible that West-Ward, Amneal, Ohm or any other company that receives FDA approval of an ANDA for a generic version of Xyrem or an NDA for another sodium oxybate product could introduce a generic version of Xyrem or other sodium oxybate product before the entry dates specified in our settlement agreements or before our patents expire, including if it is determined that any such generic version of Xyrem or sodium oxybate product does not infringe our patents, if it is determined that our patents are invalid or unenforceable, or if a non-settling ANDA filer that has received approval for its product decides, before applicable ongoing patent litigation is concluded, to launch a sodium oxybate product at risk of being held liable for damages for patent infringement. For a description of our ongoing patent proceedings in the District Court and related regulatory matters and further discussion regarding the risks associated with our settlement agreement with West-Ward, the potential launch of a generic version of Xyrem, or the approval and launch of other sodium oxybate or other products that compete with Xyrem, as well as other risks and challenges we face

with respect to Xyrem, see “Legal Proceedings” in Part II, Item 1 of this Quarterly Report on Form 10-Q, see the risk factors under the headings “Risks Related to Xyrem and the Significant Impact of Xyrem Sales” and “We have incurred and expect to continue to incur substantial costs as a result of litigation or other proceedings relating to patents, other intellectual property rights and related matters, and we may be unable to protect our rights to, or commercialize, our products” in this Part II, Item 1A.

The existence of a patent will not necessarily prevent other companies from developing similar or therapeutically equivalent products or protect us from claims of third parties that our products infringe their issued patents, which may require licensing and the payment of significant fees or royalties. Competitors may successfully challenge our patents, produce similar products that do not infringe our patents, or manufacture products in countries where we have not applied for patent protection or that do not respect our patents. Accordingly, we cannot predict the breadth of claims that may be allowed or enforced in our patents, our licensed patents or in third party patents.

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The degree of future protection to be afforded by our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example:

- others may independently develop similar or alternative products without infringing our intellectual property rights, such as products that are not covered by the claims of our patents, or for which we do not have adequate exclusive rights under our license agreements;
- we or our licensors or partners might not have been the first to invent or file, as appropriate, subject matters covered by our issued patents or pending patent applications or the pending patent applications or issued patents of our licensors or partners;
- our pending patent applications may not result in issued patents;
- our issued patents and the issued patents of our licensors or partners may not provide us with any competitive advantages, or may be held invalid or unenforceable as a result of legal challenges by third parties;
- our issued patents and the issued patents of our licensors or partners may be vulnerable to legal challenges as a result of changes in applicable law;
- we may not develop additional proprietary products that are patentable; or
- the patents of others may have an adverse effect on our business.

We also rely on trade secrets and other unpatented proprietary information to protect our products and commercial position, particularly with respect to our products with limited or no patent protection, such as Erwinaze. We seek to protect our trade secrets and other unpatented proprietary information in part through confidentiality agreements with our employees, consultants, advisors and partners. Nevertheless, our employees, consultants, advisors and partners may unintentionally or willfully disclose our proprietary information to competitors, and we may not have adequate remedies for such disclosures. In addition, if our employees, consultants, advisors or partners develop inventions or processes independently, or jointly with us, that may be applicable to our products, disputes may arise about ownership or proprietary rights to those inventions and processes. Such inventions and processes will not necessarily become our property, but may remain the property of those third parties or their employers. Enforcing a claim that a third party illegally obtained or is using any of our inventions or trade secrets is expensive and time-consuming, and the outcome is unpredictable. In addition, courts outside of the U.S. are sometimes less willing to protect trade secrets. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how. Failure to obtain or maintain patent and/or trade secret protection, for any reason, could have a material adverse effect on our business.

Certain of the products we sell have no patent protection and, as a result, potential competitors face fewer barriers in introducing competing products. We rely on trade secrets and other unpatented proprietary information to protect our commercial position with respect to such products, which we may be unable to do. In some instances, we also rely on regulatory exclusivity. For example, Erwinaze has no patent protection. In addition to protection using trade secrets, Erwinaze has orphan drug exclusivity in the U.S. for a seven-year period from its FDA approval, which precludes approval of another product with the same principal molecular structure for the same indication until November 2018. Erwinaze, as a biologic product approved under a BLA, is also subject to the U.S. Biologics Price Competition and Innovation Act, or BPCIA. We believe that Erwinaze is protected by exclusivity that prevents approval of a biosimilar in the U.S. through late 2023 under the BPCIA. However, the BPCIA may evolve over time based on FDA issuance of guidance documents, proposed regulations, and decisions in the course of considering specific applications. As a result, it is possible that a potential competing drug product might obtain FDA approval before the orphan drug and expected BCPIA exclusivity periods have expired, which would adversely affect sales of Erwinaze. In the EU, the regulatory data protection and thus regulatory exclusivity period for Erwinase has lapsed. This also means that any new marketing authorizations for Erwinase in other EU member states will not receive any regulatory data protection. If a biosimilar product to Erwinaze is approved as interchangeable to Erwinaze in the U.S. or in other countries where Erwinaze is sold, a significant percentage of the prescriptions that would have been written for Erwinaze may be filled with the biosimilar version, resulting in a loss in sales of Erwinaze, and there may be a decrease in the price at which Erwinaze can be sold. Competition from a biosimilar product to Erwinaze could have a material adverse effect on our

business, financial condition, results of operations and growth prospects.

Our research and development collaborators may have rights to publish data and other information to which we have rights. In addition, we sometimes engage individuals or entities to conduct research that may be relevant to our business. While the ability of these individuals or entities to publish or otherwise publicly disclose data and other information generated during the course of their research is subject to contractual limitations, these contractual provisions may be insufficient or inadequate to protect our trade secrets and may impair our patent rights. If we do not apply for patent protection prior to such publication, or if we cannot otherwise maintain the confidentiality of our innovations and other confidential information, then our ability to obtain patent protection or protect our proprietary information may be jeopardized. Moreover, a dispute may arise with our business partners over the ownership of rights to jointly developed intellectual property. Such disputes, if not successfully resolved, could lead to a loss of rights and possibly prevent us from pursuing certain new products or product candidates.

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We have incurred and expect to continue to incur substantial costs as a result of litigation or other proceedings relating to patents, other intellectual property rights and related matters, and we may be unable to protect our rights to, or commercialize, our products.

Our ability, and that of our partners, to commercialize any approved products will depend, in part, on our ability to obtain patents, enforce those patents and operate without infringing the proprietary rights of third parties. The patent positions of pharmaceutical companies can be highly uncertain and involve complex legal and factual questions. We have filed multiple U.S. patent applications and non-U.S. counterparts, and may file additional U.S. and non-U.S. patent applications. There can be no assurance that any issued patents we own or control will provide sufficient protection to conduct our business as presently conducted or as proposed to be conducted. Moreover, for a variety of reasons, including the existence of relevant prior research performed and the existence of conflicting patent applications submitted in the same manner or similar fields, there can be no assurance that any patents will issue from the patent applications owned by us, or that we will remain free from infringement claims by third parties.

If we choose to go to court to stop a third party from infringing our patents, our licensed patents or our partners' patents, that third party has the right to ask the court, or to argue in front of an administrative agency, to rule that these patents are invalid and/or should not be enforced. These lawsuits and administrative proceedings are expensive and consume time and other resources, and we may not be successful in these proceedings or in stopping infringement. In addition, the IPR process under the Leahy-Smith America Invents Act permits any person, whether they are accused of infringing the patent at issue or not, to challenge the validity of certain patents. As a result, entities associated with hedge funds as well as ANDA litigants have challenged valuable pharmaceutical patents through the IPR process. There is a risk that a court will decide that our patents are not valid or infringed, or that the PTAB will decide that certain patents are not valid, and that we do not have the right to stop a third party from using the patented subject matter. In addition, even if we prevail in establishing that another product infringes a valid claim of one of our patents, a court may determine that we can be compensated for the infringement in damages, and refuse to issue an injunction. As a result, we may not be entitled to stop another party from infringing our patents for their full term. For a description of our ongoing patent proceedings in the District Court and related regulatory matters and further discussion regarding the risks associated with our settlement agreement with West-Ward, the potential launch of a generic version of Xyrem, or the approval and launch of other sodium oxybate or other products that compete with Xyrem, as well as other risks and challenges we face with respect to Xyrem, see "Legal Proceedings" in Part II, Item 1 of this Quarterly Report on Form 10-Q and the risk factors under the headings "Risks Related to Xyrem and the Significant Impact of Xyrem Sales" and "It is difficult and costly to protect our proprietary rights, and we may not be able to ensure their protection" in this Part II, Item 1A. We cannot assure you that our pending lawsuits, other lawsuits or proceedings we may file in the future, or our defense against any lawsuits or other proceeding that have been or will be brought against us will be successful in stopping the infringement of our patents, that any such litigation or other proceedings will be cost-effective, or that any of them will have a satisfactory result for us.

Litigation involving patent matters is frequently settled between the parties, rather than continuing to a court ruling, and we have settled patent litigation with three of the Xyrem ANDA filers. The FTC has publicly stated that, in its view, certain types of agreements between brand and generic pharmaceutical companies related to the settlement of patent litigation or the manufacture, marketing and sale of generic versions of branded drugs violate the antitrust laws and has commenced investigations and brought actions against some companies that have entered into such agreements. In particular, the FTC has expressed its intention to take aggressive action to challenge settlements that include an alleged transfer of value from the brand company to the generic company (so-called "pay for delay" patent litigation settlements) and to call on legislators to pass stronger laws prohibiting such settlements. Because there is currently no precise legal standard with respect to the lawfulness of such settlements, there could be extensive litigation over whether any settlement that we have entered into or might enter into in the future constitutes a reasonable and lawful patent settlement. We may receive formal or informal requests from the FTC regarding our Xyrem patent settlements, including our April 2017 settlement with West-Ward, and there is a risk that the FTC may commence a formal investigation or action against us, or a third party may initiate civil litigation regarding this settlement, which could divert the attention of management and cause us to incur significant costs, regardless of the

outcome. Any such investigations or lawsuits, and the outcome thereof, could be costly to us and could have a material adverse effect on our business.

A third party may claim that we or our manufacturing or commercialization partners are using inventions covered by the third party's patent rights, or that we or such partners are infringing, misappropriating or otherwise violating other intellectual property rights, and may go to court to stop us from engaging in our normal operations and activities, including making or selling our products. Such lawsuits are costly and could affect our results of operations and divert the attention of management and development personnel. There is a risk that a court could decide that we or our partners are infringing, misappropriating or otherwise violating third party patent or other intellectual property rights, which could be very costly to us and have a material adverse effect on our business.

In the pharmaceutical and life sciences industry, like other industries, it is not always clear to industry participants, including us, which patents cover various types of products or methods. The coverage of patents is subject to interpretation by

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the courts, and the interpretation is not always uniform. If we are sued for patent infringement, we would need to demonstrate that our products or methods do not infringe the patent claims of the relevant patent and/or that the patent claims are invalid or unenforceable, which we may not be able to do.

Because some patent applications in the U.S. may be maintained in secrecy until the patents are issued, because patent applications in the U.S. and many non-U.S. jurisdictions are typically not published until 18 months after their priority date, and because publications in the scientific literature often lag behind actual discoveries, we cannot be certain that others have not filed patent applications for inventions covered by our or our licensors' issued patents or pending applications, or that we or our licensors were the first inventors. Our competitors may have filed, and may in the future file, patent applications covering subject matter similar to ours. Any such patent application may have priority over our or our licensors' patents or applications and could further require us to obtain rights to issued patents covering such subject matter. If another party has filed a U.S. patent application on inventions similar to ours, we may have to participate in an interference proceeding declared by the USPTO to determine priority of invention in the U.S. The costs of these proceedings could be substantial, and it is possible that such efforts would be unsuccessful, resulting in a loss of our U.S. patent position with respect to such inventions. Patent interferences are limited or unavailable for patent applications filed after March 16, 2013.

Some of our competitors may be able to sustain the costs of complex patent and other intellectual property litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations.

In September 2016, Jazz Pharmaceuticals, Inc., our wholly owned subsidiary, submitted a Citizen Petition to the FDA requesting that, for safety reasons, the FDA refuse to approve any sodium oxybate ANDA with a proposed package insert or REMS that omits the portions of the Xyrem package insert and the Xyrem REMS that instruct prescribers on adjusting the dose of the product when it is co-administered with divalproex sodium (also known as valproate or valproic acid). Our Xyrem patents include three DDI patents covering these instructions on the Xyrem package insert and Xyrem REMS. Our lawsuits against each of the Xyrem ANDA filers allege infringement of multiple patents, including the DDI patents, and seek a permanent injunction to prevent these Xyrem ANDA filers from introducing a generic version of Xyrem that would infringe our patents. On January 17, 2017, the FDA granted the Citizen Petition with respect to the Xyrem package insert. The FDA concluded that it will not approve any sodium oxybate ANDA referencing Xyrem that does not include in its package insert the portions of the currently approved Xyrem package insert related to the drug-drug interaction with divalproex sodium. The FDA stated that it did not need to reach the question of whether the drug-drug interaction information could have been excluded from the generic sodium oxybate REMS materials because it was approving a REMS in connection with a sodium oxybate ANDA including that information. We cannot predict whether or when one or more of the ANDA filers may pursue a challenge to the FDA's response to the Citizen Petition or whether any such challenges would be successful. Likewise, we cannot predict whether we will be able to maintain the validity of any of our patents or will otherwise obtain a judicial determination that the generic sodium oxybate package insert or the generic sodium oxybate REMS will infringe any of our patents or, if we prevail in proving infringement, whether a court will grant an injunction that prevents any non-settling ANDA filer or other company introducing a different sodium oxybate product from marketing its product or instead require that party to pay damages in the form of lost profits or a reasonable royalty. For a description of these matters, see "Legal Proceedings" in Part II, Item 1 of this Quarterly Report on Form 10-Q and the risk factors under the headings "Risks Related to Xyrem and the Significant Impact of Xyrem Sales" and "Risks Related to Our Intellectual Property" in this Part II, Item 1A.

We also own method of use patents and trade secrets that cover elements of the Xyrem REMS, including patents that cover the use of a single central pharmacy to distribute Xyrem. In July 2016, the PTAB issued final decisions that the claims of six of seven REMS patents are unpatentable; as a result, if the United States Court of Appeals for the Federal Circuit upholds those decisions on appeal, these claims will be canceled. We have filed notices of appeal with respect to these IPR decisions to the United States Court of Appeals for the Federal Circuit. In September 2015, certain of the ANDA filers filed a petition for IPR with respect to the validity of an additional REMS patent. In March

2016, the PTAB partially instituted an IPR on a seventh REMS patent, declining to review 25 of 28 claims. In March 2017, the PTAB issued a final decision that the remaining three claims of the additional REMS patent are unpatentable. We filed a notice of appeal of that decision on May 18, 2017, and the Court of Appeals for the Federal Circuit has consolidated the appeal of the March 2017 decision with the pending appeals of the July 2016 decisions. For a description of these matters, see “Legal Proceedings” in Part II, Item 1 of this Quarterly Report on Form 10-Q. The Xyrem REMS approval letter includes statements from the FDA that (i) the approval action should not be construed or understood as agreement with us that dispensing through a single pharmacy is the only way to ensure that the benefits of Xyrem outweigh its risks, and that the FDA has continuing concerns that limiting the distribution of Xyrem to one pharmacy imposes burdens on patient access and the healthcare delivery system and (ii) as with all REMS, the FDA intends to evaluate the Xyrem REMS on an ongoing basis and will require modifications as may be appropriate. We cannot predict whether the FDA will request, seek to require or ultimately require modifications to, or impose additional requirements on, the Xyrem

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REMS in connection with the approval of the generic sodium oxybate REMS, the anticipated distribution of the West-Ward AG Product, or otherwise, or the potential timing, terms or propriety thereof.

Any such modifications or additional requirements could potentially make it easier for future sodium oxybate competitors, make it more difficult or expensive for us to distribute Xyrem and/or negatively affect sales of Xyrem. In particular, depending on the nature of any such modifications or additional requirements, the ability of our existing patents and other intellectual property to protect our Xyrem distribution system from sodium oxybate competitors may be reduced. In addition, the extent of protection provided by our patents and other intellectual property related to the distribution of Xyrem depends on the nature of the distribution system that may be used by any sodium oxybate competitor. If the generic sodium oxybate REMS that has been approved by the FDA in connection with its approval of West-Ward's ANDA does not fall within the scope of any of the claims of our patents, those patents will not be a barrier to any non-settling ANDA filer's or other unlicensed sodium oxybate product manufacturer's entry into the market. We cannot be certain whether our existing patents, patents that may be granted in the future or other intellectual property will be construed to cover the generic sodium oxybate REMS. The interpretation of intellectual property protections and the effect of these protections are extremely complex, and we cannot predict the impact of any of these matters on our business.

Risks Related to Our Industry

The regulatory approval process is expensive, time-consuming and uncertain and may prevent us or our partners from obtaining approvals for the commercialization of some or all of our product candidates.

The manufacturing, labeling, packaging, adverse event reporting, storage, advertising, promotion, sale, distribution, record keeping, importing and exporting of our products and our research and development activities are subject to extensive regulation by the FDA, the DEA, the EC, the competent authorities of the EU member states and other regulatory authorities. Regulations differ from country to country. As a result of these regulations, product development, approval and commercialization processes are expensive and time-consuming. For example, we are not permitted to market a pharmaceutical product in the U.S. or in the EU member states until we receive approval from the FDA, the EC or the competent authorities of the EU member states, as applicable. An application for marketing approval must contain information demonstrating the quality, safety and efficacy of the pharmaceutical product, including data from preclinical and clinical trials, information pertaining to the preparation and manufacture of the API, analytical methods, product formulation, details on the manufacture and stability of the finished pharmaceutical product and proposed product packaging and labeling. Submission of an application for marketing authorization does not assure approval for marketing in any jurisdiction, and we may encounter significant difficulties or costs in our efforts to obtain approval to market products. If we are unable to obtain regulatory approval of our product candidates, we will not be able to commercialize them and recoup our research and development costs. Any delay or failure in obtaining approval of a drug candidate, or receipt of approval for narrower indications than sought, can have a negative impact on our financial performance.

An approved drug product or drug candidate that has not yet been approved by the FDA or equivalent authorities in other countries may be subject to scheduling as a controlled substance under the U.S. Controlled Substances Act, or CSA, depending on the drug's potential for abuse. Controlled substances that are pharmaceutical products are subject to a high degree of regulation under the CSA, or equivalent legislation in other countries, which establishes, among other things, certain registration, manufacturing quotas, security, recordkeeping, reporting, import, export and other requirements administered by the DEA. For a drug approved by the FDA and determined to require control under the CSA, the CSA requires the DEA to issue an interim final order scheduling the drug within 90 days after the FDA approves the drug and the DEA receives a scientific and medical evaluation and scheduling recommendation from the U.S. Department of Health and Human Services, or HHS. We expect that JZP-110 will be subject to scheduling under the CSA before it can be commercially launched. Moreover, depending on its scheduling, the manufacture, importation, exportation, domestic distribution, storage, sale and legitimate use of JZP-110 may be subject to a significant degree of regulation by the DEA.

If the FDA, the EC or the competent authorities of the EU member states determine that a REMS or the imposition of post-marketing obligations is necessary to ensure that the benefits of the drug outweigh the risks, we may be required to include a proposed REMS as part of an NDA or BLA or to propose post-marketing obligations to be included in the marketing authorization for our products in the EU. In non-EU countries, we may also be required to include a patient package insert or a medication guide to provide information to consumers about the product's risks and benefits, a plan for communication to healthcare providers, and restrictions on the product's distribution. For example, the FDA requires a REMS for Xyrem, discussed in detail in the risk factor under the heading "The distribution and sale of Xyrem are subject to significant regulatory oversight and restrictions and the requirements of a risk evaluation and mitigation strategy, and these restrictions and requirements, as well as the potential impact of changes to these restrictions and requirements, subject us to increased risks and uncertainties, any of which could negatively impact sales of Xyrem" in this Part II, Item 1A, and other products that we sell

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are or may become subject to a REMS specific to our product or shared with other products in the same class of drug. We cannot predict the impact that any new REMS requirements applicable to any of our products would have on our business.

The FDA approved the BLA for Erwinaze in the U.S. in November 2011, subject to certain post-marketing requirements, which have been completed, and compliance with multiple post-marketing commitments, including certain commitments that must be met by the product's manufacturer with respect to product manufacturing, which are outside of our control. While activities are underway to complete the post-marketing commitments, any inability to comply with regulatory requirements, including compliance with manufacturing-related post-marketing commitments that are part of the BLA approval, as well as other requirements monitored by the FDA, could adversely affect Erwinaze supply, particularly in light of our extremely limited product inventory, and could result in FDA approval being revoked, product release being delayed resulting in product shortage or product recalls, any of which could have a material adverse effect on our sales of and revenues from Erwinaze and limit our potential future maintenance and growth of the market for this product. See also the discussion under the heading "The loss of our single source suppliers, delays or problems in the supply of our products for commercial sale or our product candidates for use in our clinical trials, or our or our suppliers' failure to comply with manufacturing regulations, could materially and adversely affect our business, financial condition, results of operations and growth prospects." in this Part II, Item 1A.

As another example, the marketing authorization in the EU for Defitelio requires us to comply with a number of post-marketing obligations, including obligations relating to the establishment of a patient registry to investigate the long-term safety, health outcomes and patterns of utilization of Defitelio during normal use, and the FDA imposed several post-marketing commitments and requirements in connection with its approval of our NDA for Defitelio in March 2016, including the requirement that we conduct a clinical trial, or the Defitelio post-marketing trial, to analyze the safety of defibrotide versus best supportive care in the prevention of VOD in adult and pediatric patients. In January 2017, we enrolled the first patient in the Defitelio post-marketing trial. If we fail to complete any of these post-marketing obligations, including our failure to satisfactorily complete the Defitelio post-marketing trial, the ongoing validity of the marketing authorization may be called into question, our sales of and revenues from Defitelio could be materially adversely affected and our potential future maintenance and growth of the market for this product may be limited.

A significant proportion of the regulatory framework in the UK is derived from EU directives and regulations, and for that reason, the UK's 2016 referendum regarding withdrawal from the EU could materially change the regulatory regime applicable to our operations, including with respect to the approval of our product candidates, as there is significant uncertainty concerning the future relationship between the UK and the EU. This includes the laws and regulations that will apply as the UK determines which EU laws to replace or replicate in the event of a withdrawal. From a regulatory perspective, the UK's withdrawal could result in significant complexity and risks. A basic requirement related to the grant of a marketing authorization for a medicinal product in the EU is the requirement that the applicant is established in the EU. Following withdrawal of the UK from the EU, marketing authorizations previously granted to applicants established in the UK through the mutual recognition or decentralized procedures in which an EU member state other than the UK was the reference member state may no longer be valid. Moreover, depending upon the exact terms of the UK's withdrawal, there is an arguable risk that the scope of a marketing authorization for a medicinal product granted by the EC pursuant to the centralized procedure would not, in the future, include the UK. In these circumstances, an authorization granted by the UK's competent authorities would be required to place medicinal products on the UK market.

In addition, the laws and regulations that will apply after the UK withdraws from the EU may have implications for manufacturing sites that hold certification issued by the UK competent authorities. Our capability to rely on these manufacturing sites for products intended for the EU market would also depend upon the exact terms of the UK's withdrawal.

Any such changes to the regulatory regime could have a material adverse effect on the pharmaceutical industry generally and on our ability to obtain approval for our product candidates or, if approved, to successfully commercialize our product candidates. For a further discussion, see the risks under the heading "The results of the UK's

referendum on withdrawal from the EU may have a negative effect on global economic conditions, financial markets and our business" in this Part II, Item 1A.

Changes in healthcare law and implementing regulations, including those based on recently enacted legislation, as well as changes in healthcare policy, may impact our business in ways that we cannot currently predict, and these changes could have a material adverse effect on our business and financial condition.

The Patient Protection and Affordable Care Act, as amended by the Healthcare and Education Reconciliation Act of 2010, together, the Healthcare Reform Act, is a sweeping measure intended to expand healthcare coverage within the U.S., primarily through the imposition of health insurance mandates on employers and individuals, the provision of subsidies to eligible individuals enrolled in plans offered on the health insurance exchanges, and the expansion of the Medicaid program. This law has substantially changed the way healthcare is financed by both governmental and private insurers, and significantly impacts the pharmaceutical industry. Changes that may affect our business include those governing enrollment in federal healthcare programs, reimbursement changes, benefits for patients within a coverage gap in the Medicare Part D prescription drug program (commonly known as the "donut hole"), rules regarding prescription drug benefits under the health insurance

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exchanges, changes to the Medicaid Drug Rebate program, expansion of the Public Health Service's 340B drug pricing program, or the 340B program, fraud and abuse and enforcement. These changes have impacted previously existing government healthcare programs and have resulted in the development of new programs, including Medicare payment for performance initiatives and improvements to the physician quality reporting system and feedback program. Details of the changes to the Medicaid Drug Rebate program and the 340B program are discussed in the risk factor under the heading "If we fail to comply with our reporting and payment obligations under the Medicaid Drug Rebate program or other governmental pricing programs, we could be subject to additional reimbursement requirements, penalties, sanctions and fines, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects" in this Part II, Item 1A. Congress could enact additional legislation that further increases Medicaid drug rebates or other costs and charges associated with participating in the Medicaid Drug Rebate program. The issuance of regulations and coverage expansion by various governmental agencies relating to the Medicaid Drug Rebate program has increased and will continue to increase our costs and the complexity of compliance, has been and will be time-consuming, and could have a material adverse effect on our results of operations.

Some states have elected not to expand their Medicaid programs by raising the income limit to 133% of the federal poverty level, as is permitted under the Healthcare Reform Act. For each state that does not choose to expand its Medicaid program, there may be fewer insured patients overall, which could impact our sales, business and financial condition. Where Medicaid patients receive insurance coverage under any of the new options made available through the Healthcare Reform Act, the possibility exists that manufacturers may be required to pay Medicaid rebates on drugs used under these circumstances, a decision that could impact manufacturer revenues. In addition, there have been delays in the implementation of key provisions of the Healthcare Reform Act, including the excise tax on generous employer-based health insurance plans. The implications of these delays for our sales, business and financial condition, if any, are not yet clear.

Moreover, legislative changes to or regulatory changes under the Healthcare Reform Act remain possible and appear likely in the 115th U.S. Congress and under the Trump Administration. The nature and extent of any legislative or regulatory changes to the Healthcare Reform Act are uncertain at this time, particularly given the introduction of the American Health Care Act of 2017, or AHCA, which would repeal and replace key portions of the Healthcare Reform Act. The AHCA was passed by the U.S. House of Representatives but has not been passed by the U.S. Senate. We expect that the Healthcare Reform Act, as currently enacted or as it may be amended in the future, and other healthcare reform measures that may be adopted in the future could have a material adverse effect on our industry generally and on our ability to maintain or increase sales of our existing products or to successfully commercialize our product candidates, if approved. In addition to the Healthcare Reform Act, there will continue to be proposals by legislators at both the federal and state levels, regulators and third party payors to keep healthcare costs down while expanding individual healthcare benefits.

Likewise, in the countries in the EU, legislators, policymakers and healthcare insurance funds continue to propose and implement cost-containing measures to keep healthcare costs down, due in part to the attention being paid to healthcare cost containment and other austerity measures in the EU. Certain of these changes could impose limitations on the prices we will be able to charge for our products and any approved product candidates or the amounts of reimbursement available for these products from governmental agencies or third party payors, may increase the tax obligations on pharmaceutical companies such as ours, or may facilitate the introduction of generic competition with respect to our products. Further, an increasing number of EU member states and other foreign countries use prices for medicinal products established in other countries as "reference prices" to help determine the price of the product in their own territory. Consequently, a downward trend in prices of medicinal products in some countries could contribute to similar downward trends elsewhere. In addition, the ongoing budgetary difficulties faced by a number of EU member states, including Greece and Spain, have led and may continue to lead to substantial delays in payment and payment partially with government bonds rather than cash for medicinal drug products, which could negatively impact our revenues and profitability. Moreover, in order to obtain reimbursement for our products in some countries, including some EU member states, we may be required to conduct clinical trials that compare the cost-effectiveness of our

products to other available therapies. There can be no assurance that our products will obtain favorable reimbursement status in any country.

To help patients afford our products, we have various programs to assist them, including patient assistance programs, a Xyrem free product voucher program and co-pay coupon programs for Xyrem and certain other products. Additionally, we make grants to independent charitable foundations that help financially needy patients with their premium, co-pay, and co-insurance obligations. Co-pay coupon programs, including our program for Xyrem, have received some negative publicity related to allegations regarding their use to promote branded pharmaceutical products over other less costly alternatives. In recent years, pharmaceutical manufacturers were named in class action lawsuits challenging the legality of their co-pay programs under a variety of federal and state laws. In addition, at least one insurer has directed its network pharmacies to no longer accept co-pay coupons for certain specialty drugs the insurer identified. Our co-pay coupon programs could become the target of similar lawsuits or insurer actions. In addition, in November 2013, the Centers for Medicare and Medicaid Services, or CMS, issued guidance to the issuers of qualified health plans sold through the Healthcare Reform Act’s marketplaces encouraging such plans to reject patient cost-sharing support from third parties and indicating that CMS intends to monitor the

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provision of such support and may take regulatory action to limit it in the future. CMS subsequently issued a rule requiring individual market qualified health plans to accept third-party premium and cost-sharing payments from certain government-related entities. In September 2014, the Office of Inspector General, or OIG, of the HHS issued a Special Advisory Bulletin warning manufacturers that they may be subject to sanctions under the federal anti-kickback statute and/or civil monetary penalty laws if they do not take appropriate steps to exclude Medicare Part D beneficiaries from using co-pay coupons. It is possible that changes in insurer policies regarding co-pay coupons and/or the introduction and enactment of new legislation or regulatory action could restrict or otherwise negatively affect these patient support programs, which could result in fewer patients using affected products, including Xyrem, and therefore could have a material adverse effect on our sales, business and financial condition.

Patient assistance programs that receive financial support from companies have become the subject of enhanced government and regulatory scrutiny. The OIG has established guidelines that permit pharmaceutical manufacturers to make donations to charitable organizations who provide co-pay assistance to Medicare patients, provided that such organizations, among other things, are bona fide charities, are entirely independent of and not controlled by the manufacturer, provide aid to applicants on a first-come basis according to consistent financial criteria, and do not link aid to use of a donor's product. If we or our vendors or donation recipients are deemed to fail to comply with relevant laws, regulations or evolving government guidance in the operation of these programs, we could be subject to damages, fines, penalties or other criminal, civil or administrative sanctions or enforcement actions. We cannot ensure that our compliance controls, policies and procedures will be sufficient to protect against acts of our employees, business partners or vendors that may violate the laws or regulations of the jurisdictions in which we operate. In May and October 2016 and February 2017, we received subpoenas from the U.S. Attorney's Office for the District of Massachusetts requesting documents related to our support of 501(c)(3) organizations that provide financial assistance to Medicare patients and documents concerning the provision of financial assistance to Medicare patients taking drugs sold by us. Regardless of whether we have complied with the law, a government investigation could impact our business practices, harm our reputation, divert the attention of management, increase our expenses and reduce the availability of foundation support for our patients who need assistance. For more information, see the risk factor under the heading "We are subject to significant ongoing regulatory obligations and oversight, which may result in significant additional expense and limit our ability to commercialize our products" in this Part II, Item 1A.

We are subject to significant ongoing regulatory obligations and oversight, which may result in significant additional expense and limit our ability to commercialize our products.

Oversight by FDA and Equivalent Non-U.S. Regulatory Authorities

We are subject to significant ongoing regulatory obligations with respect to our marketed products, such as safety reporting requirements and additional post-marketing obligations, including regulatory oversight of the promotion and marketing of our products. In addition, research, testing, manufacturing, labeling, packaging, adverse event reporting, storage, advertising, promotion, sale, distribution, record keeping, importing and exporting of our products are, and any of our product candidates that may be approved by the FDA, the EC, the competent authorities of the EU member states and other non-U.S. regulatory authorities will be, subject to extensive and ongoing regulatory requirements. These requirements apply both to us and to third parties we contract with to perform services and supply us with products. Failure by us or any of our third party partners, including suppliers, distributors and our central pharmacy for Xyrem, to comply with applicable requirements could subject us to administrative or judicial sanctions or other negative consequences, such as delays in approval or refusal to approve a product candidate, withdrawal, suspension or variation of product approval, untitled letters, warning letters, fines and other monetary penalties, unanticipated expenditures, product recall, withdrawal or seizure, total or partial suspension of production or distribution, interruption of manufacturing or clinical trials, operating restrictions, injunctions; suspension of licenses, civil penalties and/or criminal prosecution, any of which could have a significant impact on our sales, business and financial condition.

We monitor adverse events resulting from the use of our commercial products, as do the regulatory authorities, and we file periodic reports with the authorities concerning adverse events. The authorities review these events and reports, and if they determine that any events and/or reports indicate a trend or signal, they can require a change in a product

label, restrict sales and marketing and/or require or conduct other actions, potentially including withdrawal or suspension of the product from the market, any of which could result in reduced market acceptance and demand for our products, could harm our reputation and our ability to market our products in the future, and could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

The FDA and the competent authorities of the EU member states on behalf of the EMA also periodically inspect our records related to safety reporting. Following such inspections, the FDA may issue notices on FDA Form 483 and warning letters that could cause us to modify certain activities. The EMA's Pharmacovigilance Risk Assessment Committee, or the PRAC, may propose to the Committee for Human Medicinal Products, or the CHMP, that the marketing authorization holder be required to take specific steps or advise that the existing marketing authorization be varied, suspended, or withdrawn. An FDA Form 483 notice, if issued at the conclusion of an FDA inspection, can list conditions the FDA investigators believe may have

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violated relevant FDA regulations or guidance. Failure to adequately and promptly correct the observation(s) can result in further regulatory enforcement action. For example, in April 2014, we received an FDA Form 483 at the conclusion of a pharmacovigilance inspection conducted by the FDA. The FDA Form 483 included observations relating to certain aspects of our adverse drug experience, or ADE, reporting system for all of our products, including Xyrem. We responded to the FDA Form 483 with a description of the corrective actions and improvements we had implemented before or shortly following the inspection and additional improvements that we planned to implement, and have now implemented, to address the observations in the FDA Form 483. In August 2014, the FDA issued an Establishment Inspection Report to us, which indicates that the inspection is closed. Although we have implemented improvements to our ADE reporting system, there can be no assurance that the FDA or other regulatory agencies will not identify additional matters in future pharmacovigilance inspections or that we will be able to adequately address any matters identified by the FDA or other regulatory agencies in the future, and the failure to do so could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

If we receive regulatory approvals to sell our products, the FDA, the EC, the competent authorities of the EU member states and other non-U.S. regulatory authorities where our products are approved may impose significant restrictions on the indicated uses or marketing of our products, or impose requirements for burdensome post-approval clinical studies or trials. The terms of any product approval, including labeling, may be more restrictive than we desire and could affect the commercial potential of the product. If we become aware of problems with any of our products in the U.S., the EU or elsewhere in the world or at our third party suppliers' facilities, a regulatory agency may impose restrictions on our products, our suppliers, our other partners or us. In such an instance, we could experience a significant drop in the sales of the affected products, our product revenues and reputation in the marketplace may suffer, and we could become the target of lawsuits. For example, in April 2015, Medtronic Inc., or Medtronic, announced a consent decree with the FDA related to Medtronic's SynchroMed® II implantable infusion pump systems. Our product Prialt is approved for administration to patients via that pump. While the Medtronic consent decree does not impact existing patients with the pump, physicians who want to implant the pump in new patients are required to complete a certification process to document medical necessity. While the approved indication for Prialt is one of the conditions eligible to support a showing of medical necessity provided by the consent decree, we cannot predict the impact of this new certification requirement on sales of Prialt.

EU legislation related to pharmacovigilance, or the assessment and monitoring of the safety of medicinal products, provides that the EMA and the competent authorities of the EU member states have the authority to require companies to conduct additional post-approval clinical efficacy and safety studies. The legislation also governs the obligations of marketing authorization holders with respect to additional monitoring, adverse event management and reporting. Under the legislation and its related regulations and guidelines, we may be required to conduct a labor intensive collection of data regarding the risks and benefits of marketed products and may be required to engage in ongoing assessments of those risks and benefits, including the possible requirement to conduct additional clinical studies, which may be time-consuming and expensive and could impact our profitability. Non-compliance with such obligations can lead to the variation, suspension or withdrawal of marketing authorization or imposition of financial penalties or other enforcement measures.

The FDA approved the BLA for Erwinaze in the U.S. in November 2011, subject to certain post-marketing requirements, which have been completed, and compliance with multiple post-marketing commitments, including certain commitments that must be met by the product's manufacturer with respect to product manufacturing, which are outside of our control. While activities are underway to complete the post-marketing commitments, any inability to comply with regulatory requirements, including compliance with manufacturing-related post-marketing commitments that are part of the BLA approval, as well as other requirements monitored by the FDA, could adversely affect Erwinaze supply and could result in FDA approval being revoked or product recalls, all of which could have a material adverse effect on our sales of and revenues from Erwinaze and limit our potential future maintenance and growth of the market for this product.

The marketing authorization in the EU for Defitelio requires us to comply with a number of post-marketing obligations, including obligations relating to the establishment of a patient registry to investigate the long-term safety,

health outcomes and patterns of utilization of Defitelio during normal use, and the FDA imposed several post-marketing requirements and commitments in connection with its March 2016 approval of our NDA for Defitelio, including the requirement that we conduct the Defitelio post-marketing trial to analyze the safety of defibrotide versus best supportive care in the prevention of VOD in adult and pediatric patients. Additionally, the FDA imposed several post-marketing commitments and requirements in connection with its approval of our NDA for Vyxeos in August 2017, including the requirement that we conduct a safety study to characterize infusion-related reactions in patients treated with Vyxeos and a clinical trial to determine dosing to minimize toxicity in patients with moderate and severe renal impairment. If we fail to complete any of these post-marketing obligations for Defitelio or Vyxeos, including our failure to satisfactorily complete post-marketing studies and trials, the ongoing validity of the marketing authorizations may be called into question, our sales of and revenues from Defitelio and Vyxeos could be materially adversely affected and our potential future maintenance and growth of the markets for these products may be limited.

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Erwinase and defibrotide are available on a named patient basis in many countries where they are not commercially available. If any such country's regulatory authorities determine that we are promoting Erwinase or defibrotide without proper authorization, we could be found to be in violation of pharmaceutical advertising laws or the regulations permitting sales under named patient programs. In that case, we may be subject to financial or other penalties.

The FDA, the competent authorities of the EU member states and other governmental authorities require advertising and promotional labeling to be truthful and not misleading, and products to be marketed only for their approved indications and in accordance with the provisions of the approved label. The FDA routinely provides its interpretations of that authority in informal communications and also in more formal communications such as untitled letters or warning letters, and although such communications may not be considered final agency decisions, companies may decide not to contest the agency's interpretations so as to avoid disputes with the FDA, even if they believe the claims to be truthful, not misleading and otherwise lawful. In recent years, certain courts have determined that the First Amendment of the U.S. Constitution permits communications regarding off-label uses of drug products, as long as such communications are truthful and not misleading. At the beginning of 2017, the FDA released proposed rule changes and draft guidance on the FDA's interpretation on the limitations of such speech. These cases and regulatory actions create additional uncertainty regarding the limits of permissible communication regarding our products.

The FDA, the competent authorities of the EU member states and other governmental authorities also actively investigate allegations of off-label promotion activities in order to enforce regulations prohibiting these types of activities. A company that is found to have promoted an approved product for off-label uses may be subject to significant liability, including civil and administrative financial penalties and other remedies as well as criminal financial penalties and other sanctions. Even when a company is not determined to have engaged in off-label promotion, the allegation from government authorities or market participants that a company has engaged in such activities could have a significant impact on the company's sales, business and financial condition. The U.S. government has also required companies to enter into complex corporate integrity agreements and/or non-prosecution agreements that impose significant reporting and other burdens on the affected companies. For all of our products, it is important that we maintain a comprehensive compliance program. Failure to maintain a comprehensive and effective compliance program, and to integrate the operations of acquired businesses into a combined comprehensive and effective compliance program on a timely basis, could subject us to a range of regulatory actions that could affect our ability to commercialize our products and could harm or prevent sales of the affected products, or could substantially increase the costs and expenses of commercializing and marketing our products.

Other Regulatory Authorities

We are also subject to regulation by other regional, national, state and local agencies, including the DEA, the U.S. Department of Justice, or DOJ, the FTC, the United States Department of Commerce, or DOC, the OIG and other regulatory bodies, as well as governmental authorities in those non-U.S. countries in which we commercialize our products. In addition to the FDCA, other federal, state and non-U.S. statutes and regulations govern to varying degrees the research, development, manufacturing and commercial activities relating to prescription pharmaceutical products, including preclinical testing, approval, production, labeling, sale, distribution, import, export, post-market surveillance, advertising, dissemination of information, promotion, marketing, and pricing to government purchasers and government healthcare programs. Our partners, including our suppliers and distributors and the central pharmacy for Xyrem, a controlled substance under the CSA, are also subject to DEA and state regulations relating to manufacturing, storage, distribution and physician prescription procedures, including limitations on prescription refills and are required to maintain necessary DEA registrations and state licenses. The DEA periodically inspects facilities for compliance with its rules and regulations. Failure to comply with current and future regulations of the DEA, relevant state authorities or any comparable international requirements could lead to a variety of sanctions, including revocation or denial of renewal of DEA registrations, fines, injunctions, or civil or criminal penalties, could result in, among other things, additional operating costs to us or delays in shipments outside or into the U.S. and could have an adverse effect on our business and financial condition.

In addition, the DEA limits the quantity of certain Schedule I controlled substances that may be produced or procured in the U.S. in any given calendar year through a quota system. Accordingly, we require DEA quotas for Siegfried in the U.S. to manufacture sodium oxybate and for Patheon, our U.S.-based Xyrem supplier, to procure the sodium oxybate from Siegfried in order to manufacture and supply us with Xyrem. Because the DEA typically grants quotas on an annual basis, Siegfried and Patheon are required to request and justify allocation of sufficient annual DEA quotas as well as additional DEA quotas if our commercial or clinical requirements exceed the allocated quotas throughout the year. For the last few years, our suppliers were allocated only a portion of the published annual aggregate quota for the API. If one or more ANDA filers were to begin manufacturing a generic sodium oxybate product, generic manufacturers would need to obtain a portion of the annual aggregate API quota, which could decrease the DEA quota allocation obtained on our behalf by Siegfried and Patheon. In the past, we have also had to engage in lengthy efforts to obtain the needed quotas after the original annual quotas had first been allocated. For 2017, both Siegfried and Patheon have been allocated most, but not all, of their respective requested quotas. If, in the future, our suppliers cannot obtain the quotas that are needed on a timely basis, or at all, our business, financial condition, results of operations and growth prospects could be materially and adversely affected.

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The U.S. federal healthcare program anti-kickback statute prohibits, among other things, knowingly and willfully offering, paying, soliciting, or receiving remuneration to induce or in return for purchasing, leasing, ordering or arranging for or recommending the purchase, lease or order of any healthcare item or service reimbursable under Medicare, Medicaid or other federally financed healthcare programs. Liability may be established without a person or entity having actual knowledge of the federal Anti-Kickback Statute or specific intent to violate it. This statute has been interpreted to apply to arrangements between pharmaceutical companies on one hand and Medicare patients, prescribers, purchasers and formulary managers on the other. The Healthcare Reform Act amended the Social Security Act to provide that the government may assert that a claim including items or services resulting from a violation of the federal anti-kickback statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act. Although there are a number of statutory exemptions and regulatory safe harbors protecting certain common manufacturer business arrangements and activities from prosecution and administrative sanction, the exemptions and safe harbors are drawn narrowly, and practices that involve remuneration intended to induce prescribing, purchases or recommendations of our products may be subject to scrutiny if they do not qualify for an exemption or safe harbor. Our practices may not in all cases meet all of the criteria for safe harbor protection from anti-kickback liability, and therefore would be subject to a facts and circumstances analysis.

The False Claims Act prohibits, among other things, any person from knowingly presenting, or causing to be presented, a false or fraudulent claim for payment of federal funds, or knowingly making, or causing to be made, a false statement to get a false claim paid. The False Claims Act also permits a private individual acting as a "whistleblower" to bring actions on behalf of the federal government alleging violations of the statute and to share in any monetary recovery. Many pharmaceutical and other healthcare companies have been investigated or subject to lawsuits by whistleblowers and have reached substantial financial settlements with the federal government under the False Claims Act for a variety of alleged improper marketing activities, including providing free product to customers with the expectation that the customers would bill federal programs for the product; providing consulting fees, grants, free travel, and other benefits to physicians to induce them to prescribe the company's products; and inflating prices reported to private price publication services, which are used to set drug reimbursement rates under government healthcare programs. In addition, in recent years the government and private whistleblowers have pursued False Claims Act cases against a number of pharmaceutical companies for causing false claims to be submitted as a result of the marketing of their products for unapproved uses. Pharmaceutical and other healthcare companies also are subject to other federal false claim laws, including federal criminal healthcare fraud and false statement statutes that extend to non-government health benefit programs.

In addition, the Physician Payment Sunshine Act, or Sunshine provisions, requires extensive tracking of payments and transfers of value to physicians and teaching hospitals and public reporting of the data collected. By March 31 of each calendar year, manufacturers covered under the Sunshine provisions are required to submit a report disclosing payments and transfers of value made in the preceding calendar year, and CMS then will publish the reported data on or before June 30 of the reporting year. Public reporting under the Sunshine provisions has resulted in increased scrutiny of the financial relationships between industry, teaching hospitals and physicians, and such scrutiny may negatively impact our ability to engage with physicians on matters of importance to us. In addition, if the data reflected in our reports are found to be in violation of any of the Sunshine provisions or any other U.S. federal, state or local laws or regulations that may apply, or if we otherwise fail to comply with the Sunshine provisions, we may be subject to significant civil, criminal and administrative penalties, damages or fines.

The majority of states also have statutes or regulations similar to the federal anti-kickback law and false claims laws, which apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor. A number of states require pharmaceutical companies to report expenses relating to the marketing and promotion of pharmaceutical products and to report gifts and payments to individual physicians in the states. Other states restrict when pharmaceutical companies may provide meals to prescribers or engage in other marketing related activities. Still other states require the posting of information relating to clinical studies and their outcomes. In addition, California, Connecticut, Massachusetts and Nevada require pharmaceutical companies to implement compliance programs or marketing codes of conduct. Outside the U.S., we are subject to similar

regulations in those countries where we market and sell products.

In May 2016, we received a subpoena from the U.S. Attorney's Office for the District of Massachusetts requesting documents related to our support of 501(c)(3) organizations that provide financial assistance to Medicare patients, and, for Xyrem, documents concerning the provision of financial assistance to Medicare patients. In October 2016, we received a second subpoena updating and further specifying document requests regarding support to 501(c)(3) organizations that provide financial assistance to Medicare patients and the provision of financial assistance for Medicare patients taking drugs sold by us. In February 2017, we received a third subpoena requesting documents regarding our support to a specific 501(c)(3) organization that established a fund for narcolepsy patients in January 2017. Other companies have disclosed similar subpoenas and continuing inquiries. We are cooperating with this investigation. We are unable to predict how long this investigation will continue, whether we will receive additional subpoenas in connection with this investigation, or its outcome, but we expect that we will continue to incur significant costs in connection with the investigation, regardless of the outcome. We may also become subject to similar investigations by other state or federal governmental agencies or offices. The investigation by the U.S. Attorney's Office and any additional investigations of our patient assistance programs or other

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business practices may result in damages, fines, penalties or other criminal, civil or administrative sanctions or enforcement actions against us or 501(c)(3) organizations that we support (including organizations that provide assistance to narcolepsy and chronic pain patients), negative publicity or other negative actions as to us or 501(c)(3) organizations that we support that could harm our reputation, impact our business practices, reduce demand for, or patient access to, Xyrem and Prialt and/or reduce coverage of Xyrem and Prialt, including by federal health care programs and state health care programs. Any settlement with the U.S. Attorney's Office could result in substantial payments, and entry into a corporate integrity agreement, which would impose costs and burdens on the operation of our business. If any or all of these events occur, our business, financial condition, results of operations and stock price could be materially and adversely affected. For more information, see the risk factor under the heading "Changes in healthcare law and implementing regulations, including those based on recently enacted legislation, as well as changes in healthcare policy, may impact our business in ways that we cannot currently predict, and these changes could have a material adverse effect on our business and financial condition" in this Part II, Item 1A.

In the EU, the advertising and promotion of our products are subject to EU member states' laws governing promotion of medicinal products, interactions with physicians, misleading and comparative advertising and unfair commercial practices. In addition, other legislation adopted by individual EU member states may apply to the advertising and promotion of medicinal products. These laws require that promotional materials and advertising in relation to medicinal products comply with the product's Summary of Product Characteristics, or SmPC, as approved by the competent authorities. The SmPC is the document that provides information to physicians concerning the safe and effective use of the medicinal product. It forms an intrinsic and integral part of the marketing authorization granted for the medicinal product. Promotion of a medicinal product that does not comply with the SmPC is considered to constitute off-label promotion. The off-label promotion of medicinal products is prohibited in the EU. The applicable laws at EU level and in the individual EU member states also prohibit the direct-to-consumer advertising of prescription-only medicinal products. Violations of the rules governing the promotion of medicinal products in the EU could be penalized by administrative measures, fines and imprisonment. These laws may further limit or restrict the advertising and promotion of our products to the general public and may also impose limitations on our promotional activities with health care professionals.

Interactions between pharmaceutical companies and physicians are also governed by strict laws, regulations, industry self-regulation codes of conduct and physicians' codes of professional conduct in the individual EU member states. The provision of benefits or advantages to physicians to induce or encourage the prescription, recommendation, endorsement, purchase, supply, order or use of medicinal products is prohibited in the EU. The provision of benefits or advantages to physicians is also governed by the national anti-bribery laws of the EU member states. One example is the U.K. Bribery Act. As further discussed below, the U.K. Bribery Act applies to any company incorporated in or "carrying on business" in the U.K., irrespective of where in the world the alleged bribery activity occurs, which could have implications for our interactions with physicians both in and outside of the U.K. Violation of these laws could result in substantial fines and imprisonment. Certain EU member states require that payments made to physicians must be publicly disclosed. Moreover, agreements with physicians must often be the subject of prior notification and approval by the physician's employer, his/her competent professional organization, and/or the competent authorities of the individual EU member states. Failure to comply with these requirements could result in reputational risk, public reprimands, administrative penalties, fines or imprisonment.

Our business activities outside of the U.S. are subject to the U.S. Foreign Corrupt Practices Act, or FCPA, and similar anti-bribery or anti-corruption laws, regulations or rules of other countries in which we operate, including the U.K. Bribery Act. The FCPA and similar anti-corruption laws generally prohibit the offering, promising, giving, or authorizing others to give anything of value, either directly or indirectly, to non-U.S. government officials in order to improperly influence any act or decision, secure any other improper advantage, or obtain or retain business. The FCPA also requires public companies to make and keep books and records that accurately and fairly reflect the transactions of the company and to devise and maintain an adequate system of internal accounting controls. The U.K. Bribery Act prohibits giving, offering, or promising bribes to any person, including both U.K. and non-U.K. government officials and private persons, as well as requesting, agreeing to receive, or accepting bribes from any

person. In addition, under the U.K. Bribery Act, companies which carry on a business or part of a business in the U.K. may be held liable for bribes given, offered or promised to any person, including non-U.K. government officials and private persons, in another country by employees and persons associated with the company in order to obtain or retain business or a business advantage for the company. Liability is strict, with no element of a corrupt state of mind, but having in place adequate procedures designed to prevent bribery is an available defense. Furthermore, under the U.K. Bribery Act there is no exception for facilitation payments. As described above, our business is heavily regulated and therefore involves significant interaction with public officials, including officials of non-U.S. governments. Additionally, in many other countries, the health care providers who prescribe pharmaceuticals are employed by their government, and the purchasers of pharmaceuticals are government entities; therefore, our dealings with these prescribers and purchasers may be subject to regulation under the FCPA. Recently the SEC and the DOJ have increased their FCPA enforcement activities with respect to pharmaceutical companies. In addition, under the Dodd-Frank Wall Street Reform and Consumer Protection Act, private individuals who report to the SEC original information that leads to successful enforcement actions may be eligible for a monetary award. There is no certainty that all employees and third party business partners (including our distributors,

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wholesalers, agents, contractors, and other partners) will comply with anti-bribery laws. In particular, we do not control the actions of suppliers and other third party agents, although we may be liable for their actions. Violation of these laws may result in civil or criminal sanctions, which could include monetary fines, criminal penalties, and disgorgement of past profits, which could have a material adverse impact on our business and financial condition.

We are also subject to laws and regulations governing data privacy and the protection of health-related and other personal information. These laws include security breach notification requirements and protection of consumer health information. The legislative and regulatory landscape for privacy and data security continues to evolve, and there has been an increasing focus on privacy and data security issues which may affect our business. Numerous federal and state laws and regulations, including state security breach notification laws, state health information privacy laws, and federal and state consumer protection laws, govern the collection, use, disclosure, and protection of personal information. Although there are legal mechanisms to facilitate the transfer of personal data from the European Economic Area, or EEA, and Switzerland to the U.S., the decision of the European Court of Justice that invalidated the safe harbor framework on which we previously relied has increased uncertainty around compliance with EU privacy law requirements. As a result of the decision, it was no longer possible to rely on safe harbor certification as a legal basis for the transfer of personal data from the EU to entities in the U.S. In February 2016, the EC announced an agreement with the DOC to replace the invalidated safe harbor framework with a new EU-U.S. “Privacy Shield.” On July 12, 2016, the EC adopted a decision on the adequacy of the protection provided by the Privacy Shield. The Privacy Shield is intended to address the requirements set out by the European Court of Justice in its recent ruling by imposing more stringent obligations on companies, providing stronger monitoring and enforcement by the DOC and FTC and making commitments on the part of public authorities regarding access to information.

U.S.-based companies may certify compliance with the privacy principles of the Privacy Shield. Certification to the Privacy Shield, however, is not mandatory. If a U.S.-based company does not certify compliance with the Privacy Shield, it may rely on other authorized mechanisms to transfer personal data. In September 2016, we filed for certification for our U.S.-based subsidiaries under the Privacy Shield. This certification was approved in January 2017.

The privacy and data security landscape is still in flux. In September 2016, the Irish privacy advocacy group, Digital Rights Ireland, brought an action for annulment of the EC decision on the adequacy of Privacy Shield, Case T-670/16, which is pending before the European Court of Justice. In October 2016, a further action for annulment was brought by three French digital rights advocacy groups, La Quadrature du Net, French Data Network and the Fédération FDN. This case, Case T-738/16, is also currently pending before the European Court of Justice. Should the European Court of Justice invalidate the Privacy Shield, it will no longer be possible to transfer data from the EU to entities in the U.S. under a Privacy Shield certification, in which case other legal mechanisms would need to be put in place.

Healthcare providers who prescribe our products and research institutions that we collaborate with are subject to privacy and security requirements under the Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act, or HIPAA. Although we are not directly subject to HIPAA other than with respect to providing certain employee benefits, we potentially could be subject to criminal penalties if we, our affiliates or our agents knowingly obtain or disclose individually identifiable health information maintained by a HIPAA-covered entity in a manner that is not authorized or permitted by HIPAA.

Failure to comply with current and future federal and state laws and regulations could result in government enforcement actions (including the imposition of significant penalties), criminal and civil liability for us and our officers and directors, private litigation and/or adverse publicity that negatively affects our business.

If we or our vendors fail to comply with applicable data privacy laws, or if the legal mechanisms we or our vendors rely upon to allow for the transfer of personal data from the EEA or Switzerland to the U.S. (or other countries not considered by the EC to provide an adequate level of data protection) are not considered adequate, we could be subject to government enforcement actions and significant penalties against us, and our business could be adversely impacted if our ability to transfer personal data outside of the EEA or Switzerland is restricted, which could adversely impact our operating results. In December 2015, a proposal for an EU General Data Protection Regulation, intended to replace the current EU Data Protection Directive, was agreed between the European Parliament, the Council of the

European Union and the EC. The EU General Data Protection Regulation, which was officially adopted in April 2016 and will be applicable in May 2018, will introduce new data protection requirements in the EU, as well as substantial fines for breaches of the data protection rules. The EU General Data Protection Regulation will increase our responsibility and liability in relation to personal data that we process, and we may be required to put in place additional mechanisms to ensure compliance with the new EU data protection rules. In addition, data protection authorities of the different EU member states may interpret the EU Data Protection Directive and national laws differently, and guidance on implementation and compliance practices are often updated or otherwise revised, which adds to the complexity of processing personal data in the EU.

The number and complexity of both U.S. federal and state laws continue to increase, and additional governmental resources are being added to enforce these laws and to prosecute companies and individuals who are believed to be violating them. In addition, we expect private plaintiffs to continue to file lawsuits against pharmaceutical manufacturers under the

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whistleblower provisions of the False Claims Act and state equivalents and to seek out new theories of liability under those statutes. We also expect government enforcement agencies to continue to "intervene" in private whistleblower lawsuits, effectively converting the private lawsuit into a lawsuit by the government, which typically increases the likelihood that the lawsuit will result in increased expense for the company and/or a burdensome settlement. For example, federal enforcement agencies recently have shown interest in pharmaceutical companies' product and patient assistance programs, including manufacturer reimbursement support services and relationships with specialty pharmacies. Some of these investigations have resulted in government enforcement authorities intervening in related whistleblower lawsuits and obtaining significant civil and criminal settlements. Other private whistleblowers have proceeded without government invention, causing considerable expense to targeted companies.

Recent changes in the law have reinforced and facilitated these trends. In particular, the Healthcare Reform Act includes a number of provisions aimed at strengthening the government's ability to pursue anti-kickback and false claims cases against pharmaceutical manufacturers and other healthcare entities, including substantially increased funding for healthcare fraud enforcement activities, enhanced investigative powers, and amendments to the False Claims Act that make it easier for the government and whistleblowers to pursue cases for alleged kickback and false claim violations, such as defining a "false" claim to include any claim based on a violation of the anti-kickback statute. While we cannot say with certainty what effect these changes have had or will have on our business, we anticipate that increased enforcement and litigation, including through government intervention in whistleblower lawsuits and private whistleblowers proceeding on their own, will continue for the foreseeable future. Responding to a whistleblower lawsuit, government investigation or enforcement action, defending any claims raised, and paying any resulting fines, damages, penalties or settlement amounts would be expensive and time-consuming, and could have a material adverse effect on our reputation, business, financial condition, results of operations and growth prospects.

Several aspects of our business may subject us to antitrust scrutiny by the FTC or to civil litigation alleging violation of the antitrust laws. For example, the FTC has been paying increasing attention to the use of REMS by companies selling branded products, in particular to whether REMS may be being deliberately used to reduce the risk of competition from generic drugs in a way that may be deemed to be anticompetitive. The FDA has recently stated that it will seek to coordinate with the FTC in identifying and publicizing practices the FTC finds to be anticompetitive and has further stated that the FDA has concerns related to the role of REMS programs in delaying approval of generic products. It is possible that the FTC, the FDA, other governmental authorities or others could claim or determine that we are using the Xyrem REMS in an anticompetitive manner (including in light of the FDA's statement in the Xyrem REMS approval letter that the Xyrem REMS could be used in an anticompetitive manner inconsistent with applicable provisions of the FDCA) or have engaged in other anticompetitive practices. The FDCA further states that a REMS shall not be used by an NDA holder to block or delay generic drugs or drugs covered by an application under Section 505(b)(2), from entering the market. Several of the ANDA applicants have asserted that our REMS patents should not have been listed in the Orange Book, and that the Xyrem REMS is blocking competition. Another area of potential antitrust scrutiny relates to the settlement of patent litigation with potential generic competitors. Parties to such settlement agreements in the U.S. are required by law to file the agreements with the FTC and the DOJ for review. The FTC has publicly stated that, in its view, certain brand-generic settlement agreements violate the antitrust laws and has brought actions against certain brand and generic companies that have entered into such agreements. In particular, the FTC has expressed its intention to take aggressive action to challenge settlements that include an alleged transfer of value from the brand company to the generic company (so-called "pay for delay" patent litigation settlements) and to call on legislators to pass stronger laws prohibiting such settlements. Because there is currently no precise legal standard with respect to the lawfulness of such settlements, there could be extensive litigation over whether any settlement that we have entered into or might enter into in the future constitutes a reasonable and lawful patent settlement. We may receive formal or informal requests from the FTC regarding our Xyrem patent settlements, including our April 2017 settlement with West-Ward, and there is a risk that the FTC may commence a formal investigation or action against us, or a third party may initiate civil litigation regarding this settlement, which could divert the attention of management and cause us to incur significant costs, regardless of the outcome. Any claim or finding that we or our business partners have failed to comply with applicable laws and

regulations could be costly to us and could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

Compliance with U.S. federal and state, EU and EU member state national laws that apply to pharmaceutical manufacturers is difficult and time-consuming, and companies that violate these laws may face substantial penalties. The potential sanctions include civil monetary penalties, exclusion of a company's products from reimbursement under government programs, criminal fines and imprisonment. Because of the breadth of these laws and, in some cases, the lack of extensive legal guidance in the form of regulations or court decisions, it is possible that some of our business activities could be subject to challenge under one or more of these laws. If we or the other parties with whom we work fail to comply with applicable regulatory requirements, we or they could be subject to a range of regulatory actions that could affect our ability to commercialize our products and could harm or prevent sales of the affected products, or could substantially increase the costs and expenses of commercializing and marketing our products. Any threatened or actual government enforcement action could

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also generate adverse publicity and require that we devote substantial resources that could otherwise be used in other aspects of our business.

We manufacture certain APIs, including the defibrotide drug substance, at our manufacturing facilities in Italy. In addition, we have engaged a third party supplier to process defibrotide into the finished product in Italy. Our manufacturing facilities and those of our third party manufacturer are subject to continuing regulation by the Italian Health Authority and other Italian regulatory authorities with respect to the manufacturing of APIs and drug products, including the defibrotide drug substance and its finished form. These facilities are also subject to inspection and regulation by the EMA. Following initial approval in a jurisdiction, the competent authorities will continue to inspect our manufacturing facilities and those of our third party supplier, in some cases, unannounced, to confirm ongoing compliance with cGMP. The cGMP requirements govern quality control of the manufacturing process and documentation policies and procedures, and we and our third party suppliers will need to ensure that all of our processes, methods and equipment are compliant with cGMP. If these authorities determine that either our facilities or our third party supplier's facility in Italy do not meet the standards of compliance required under applicable regulations, they may deny approval to manufacture our products, require us to stop manufacturing our products, deny approval to the sale of our products or suspend the sale of our products.

If we fail to comply with our reporting and payment obligations under the Medicaid Drug Rebate program or other governmental pricing programs, we could be subject to additional reimbursement requirements, penalties, sanctions and fines, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

We participate in and have certain price reporting obligations to the Medicaid Drug Rebate program, several state Medicaid supplemental rebate programs and other governmental pricing programs, and we have obligations to report average sales price under the Medicare program. Under the Medicaid Drug Rebate program, we are required to pay a rebate to each state Medicaid program for our covered outpatient drugs that are dispensed to Medicaid beneficiaries and paid for by a state Medicaid program as a condition of having federal funds being made available to the states for our drugs under Medicaid and Medicare Part B. Those rebates are based on pricing data reported by us on a monthly and quarterly basis to CMS, the federal agency that administers the Medicaid Drug Rebate program. These data include the average manufacturer price and, in the case of innovator products, the best price for each drug which, in general, represents the lowest price available from the manufacturer to any entity in the U.S. in any pricing structure, calculated to include all sales and associated rebates, discounts and other price concessions. Our failure to comply with these price reporting and rebate payment obligations could negatively impact our financial results.

The Healthcare Reform Act made significant changes to the Medicaid Drug Rebate program, such as expanding rebate liability from fee-for-service Medicaid utilization to include the utilization of Medicaid managed care organizations as well and changing the definition of average manufacturer price. The Healthcare Reform Act also increased the minimum Medicaid rebate; changed the calculation of the rebate for certain innovator products that qualify as line extensions of existing drugs; and capped the total rebate amount at 100% of the average manufacturer price. Finally, the Healthcare Reform Act requires pharmaceutical manufacturers of branded prescription drugs to pay a branded prescription drug fee to the federal government. Congress could enact additional legislation that further increases Medicaid drug rebates or other costs and charges associated with participating in the Medicaid Drug Rebate program.

CMS recently issued a final regulation, which became effective on April 1, 2016, to implement the changes to the Medicaid Drug Rebate program under the Healthcare Reform Act. The issuance of the final regulation, as well as any other regulations and coverage expansion by various governmental agencies relating to the Medicaid Drug Rebate program, has increased and will continue to increase our costs and the complexity of compliance, has been and will continue to be time-consuming to implement, and could have a material adverse effect on our results of operations, particularly if CMS challenges the approach we take in our implementation of the final regulation.

Federal law requires that any company that participates in the Medicaid Drug Rebate program also participate in the Public Health Service's 340B program in order for federal funds to be available for the manufacturer's drugs under Medicaid and Medicare Part B. The 340B program requires participating manufacturers to agree to charge statutorily defined covered entities no more than the 340B "ceiling price" for the manufacturer's covered outpatient drugs. These

340B covered entities include a variety of community health clinics and other entities that receive health services grants from the Public Health Service, as well as hospitals that serve a disproportionate share of low-income patients. The Healthcare Reform Act expanded the list of covered entities to include certain free-standing cancer hospitals, critical access hospitals, rural referral centers and sole community hospitals, but exempts “orphan drugs” from the ceiling price requirements for these covered entities. The 340B ceiling price is calculated using a statutory formula based on the average manufacturer price and rebate amount for the covered outpatient drug as calculated under the Medicaid Drug Rebate program, and in general, products subject to Medicaid price reporting and rebate liability are also subject to the 340B ceiling price calculation and discount requirement. Any additional future changes to the definition of average manufacturer price and the Medicaid rebate amount under the Healthcare Reform Act could affect our 340B ceiling price calculations and negatively impact our results of operations.

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The Healthcare Reform Act obligates the Secretary of the HHS to update the agreement that manufacturers must sign to participate in the 340B program to obligate a manufacturer to offer the 340B price to covered entities if the manufacturer makes the drug available to any other purchaser at any price and to report to the government the ceiling prices for its drugs. The Health Resources and Services Administration, or HRSA, recently updated the agreement with participating manufacturers. The Healthcare Reform Act also obligates the Secretary of the HHS to create regulations and processes to improve the integrity of the 340B program. In August 2016, HRSA issued a proposed regulation regarding an administrative dispute resolution process for the 340B program to resolve claims by covered entities that they have been overcharged by manufacturers and claims by manufacturers of program violations by covered entities. It is unclear when or whether the regulation will be released in final form under the Trump Administration. On January 5, 2017, HRSA issued a final regulation regarding the calculation of 340B ceiling price and the imposition of civil monetary penalties on manufacturers that knowingly and intentionally overcharge covered entities. The effective date of the regulation has been delayed until October 1, 2017. Implementation of this final rule and the issuance of any other final regulations and guidance could affect our obligations under the 340B program in ways we cannot anticipate. In addition, legislation may be introduced that, if passed, would further expand the 340B program to additional covered entities or would require participating manufacturers to agree to provide 340B discounted pricing on drugs used in an inpatient setting.

Federal law also requires that a company that participates in the Medicaid Drug Rebate program report average sales price information each quarter to CMS for certain categories of drugs that are paid under the Medicare Part B program. Manufacturers calculate the average sales price based on a statutorily defined formula as well as regulations and interpretations of the statute by CMS. CMS uses these submissions to determine payment rates for drugs under Medicare Part B. Statutory or regulatory changes or CMS guidance could affect the average sales price calculations for our products and the resulting Medicare payment rate, and could negatively impact our results of operations.

Pricing and rebate calculations vary across products and programs, are complex, and are often subject to interpretation by us, governmental or regulatory agencies and the courts. In the case of our Medicaid pricing data, if we become aware that our reporting for a prior quarter was incorrect, or has changed as a result of recalculation of the pricing data, we are obligated to resubmit the corrected data for up to three years after those data originally were due. Such restatements and recalculations increase our costs for complying with the laws and regulations governing the Medicaid Drug Rebate program and could result in an overage or underage in our rebate liability for past quarters. Price recalculations also may affect the ceiling price at which we are required to offer our products under the 340B program.

Civil monetary penalties can be applied if we are found to have knowingly submitted any false price information to the government, if we are found to have made a misrepresentation in the reporting of our average sales price, or if we fail to submit the required price data on a timely basis. Such conduct also could be grounds for CMS to terminate our Medicaid drug rebate agreement, in which case federal payments may not be available under Medicaid or Medicare Part B for our covered outpatient drugs. We cannot assure you that our submissions will not be found by CMS to be incomplete or incorrect.

In order to be eligible to have our products paid for with federal funds under the Medicaid and Medicare Part B programs and purchased by certain federal agencies and grantees, we participate in the U.S. Department of Veterans Affairs, or VA, Federal Supply Schedule, or FSS, pricing program. As part of this program, we are obligated to make our products available for procurement on an FSS contract under which we must comply with standard government terms and conditions and charge a price that is no higher than the statutory Federal Ceiling Price, or FCP, to four federal agencies (VA, U.S. Department of Defense, or DOD, Public Health Service, and U.S. Coast Guard). The FCP is based on the Non-Federal Average Manufacturer Price, or Non-FAMP, which we calculate and report to the VA on a quarterly and annual basis. Pursuant to applicable law, knowing provision of false information in connection with a Non-FAMP filing can subject a manufacturer to penalties of $178,156 for each item of false information. These obligations also contain extensive disclosure and certification requirements.

We also participate in the Tricare Retail Pharmacy program, under which we pay quarterly rebates on utilization of innovator products that are dispensed through the Tricare Retail Pharmacy network to Tricare beneficiaries. The

rebates are calculated as the difference between the annual Non-FAMP and FCP. We are required to list our covered products on a Tricare Agreement in order for these products to be eligible for DOD formulary inclusion. If we overcharge the government in connection with our FSS contract or Tricare Agreement, whether due to a misstated FCP or otherwise, we are required to refund the difference to the government. Failure to make necessary disclosures and/or to identify contract overcharges can result in allegations against us under the False Claims Act and other laws and regulations. Unexpected refunds to the government, and responding to a government investigation or enforcement action, would be expensive and time-consuming, and could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

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Price approvals and reimbursement may not be available for our products, which could diminish our sales or affect our ability to sell our products profitably.

In both U.S. and non-U.S. markets, our ability to commercialize our products successfully, and to attract commercialization partners for our products, depends in significant part on the availability of adequate financial coverage and reimbursement from third party payors, including, in the U.S., governmental payors such as the Medicare and Medicaid programs, managed care organizations and private health insurers. In many countries, price approvals must be obtained before products can be placed on the market or submitted for reimbursement. Third party payors, including government payors, decide which drugs can be reimbursed and establish reimbursement and co-pay levels and conditions for reimbursement. Third party payors are increasingly challenging the prices charged for medical products and services and examining their cost effectiveness, in addition to their safety and efficacy. In some cases, for example, third party payors try to encourage the use of less expensive generic products through their prescription benefits coverage and reimbursement and co-pay policies. We may need to conduct expensive pharmacoeconomic and/or clinical studies in order to demonstrate the cost-effectiveness of our products. Even with such studies, our products may be considered less safe, less effective or less cost-effective than other products, and third party payors may not provide and maintain price approvals, coverage and reimbursement for our products or any of our product candidates that we commercialize, in whole or in part.

Political, economic and regulatory influences are subjecting the healthcare industry in the U.S. to fundamental changes. There have been, and we expect there will continue to be, legislative and regulatory proposals to change the healthcare system in ways that could impact our ability to sell our products profitably. We anticipate that the U.S. Congress, state legislatures and the private sector will continue to consider and may adopt healthcare policies and reforms intended to curb healthcare costs, particularly given the current atmosphere of mounting criticism of prescription drug costs in the U.S. These cost containment measures may include federal and state controls on government-funded reimbursement for drugs; new or increased requirements to pay prescription drug rebates to government health care programs; pharmaceutical cost transparency bills that aim to require drug companies to justify their prices through required disclosures; controls on healthcare providers; challenges to the pricing of drugs, or limits or prohibitions on reimbursement for specific products through other means; requirements to try less expensive products or generics before a more expensive branded product; changes in drug importation laws; expansion of use of managed care systems in which healthcare providers contract to provide comprehensive healthcare for a fixed cost per person; and public funding for cost effectiveness research, which may be used by government and private third party payors to make coverage and payment decisions.

Additionally, drug pricing by pharmaceutical companies is currently, and is expected to continue to be, under close scrutiny, including with respect to companies that have increased the price of products after acquiring those products from other companies. Both the U.S. House of Representatives and the U.S. Senate have conducted several hearings with respect to pharmaceutical drug pricing practices, including in connection with the investigation of specific price increases by several pharmaceutical companies. If we become the subject of any government investigation with respect to our drug pricing or other business practices, including as they relate to the Xyrem REMS, we could incur significant expense and could be distracted from operation of our business and execution of our strategy. Any such investigation could also result in reduced market acceptance and demand for our products, could harm our reputation and our ability to market our products in the future, and could have a material adverse effect on our business, financial condition, results of operations and growth prospects. In May and October 2016 and February 2017, we received subpoenas from the U.S. Attorney's Office for the District of Massachusetts requesting documents related to our support of 501(c)(3) organizations that provide financial assistance to Medicare patients and documents concerning the provision of financial assistance to Medicare patients taking drugs sold by us. For more information, see the risk factors under the headings "Changes in healthcare law and implementing regulations, including those based on recently enacted legislation, as well as changes in healthcare policy, may impact our business in ways that we cannot currently predict, and these changes could have a material adverse effect on our business and financial condition" and "We are subject to significant ongoing regulatory obligations and oversight, which may result in significant additional expense and limit our ability to commercialize our products" in this Part II, Item 1A. If healthcare policies or reforms intended

to curb healthcare costs are adopted or if we experience negative publicity with respect to pricing of our products or the pricing of pharmaceutical drugs generally, the prices that we charge for our products, including Xyrem, may be limited, our commercial opportunity may be limited and/or our revenues from sales of our products may be negatively impacted.

In addition, much attention has been paid to legislation proposing federal rebates on Medicare Part D and Medicare Advantage utilization for drugs issued to certain groups of lower income beneficiaries and the desire to change the provisions that treat these dual-eligible patients differently from traditional Medicare patients. Any such changes could have a negative impact on revenues from sales of our products.

Further, beginning April 1, 2013, Medicare payments for all items and services, including drugs and biologics, were reduced by 2% under the sequestration (i.e., automatic spending reductions) required by the Budget Control Act of 2011, as amended by the American Taxpayer Relief Act of 2012. Subsequent legislation extended the 2% reduction, on average, to 2025. These cuts reduce reimbursement payments related to our products, which could potentially negatively impact our revenue.

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Third party payors' practices may affect the conditions required for reimbursement and the availability of reimbursement for our products, including Xyrem, Defitelio and Vyxeos. Our business could be materially harmed if the Medicaid program, Medicare program or other third party payors in the U.S. or elsewhere were to deny reimbursement for our products, limit the indications for which our products will be reimbursed, or provide reimbursement only on unfavorable terms. This risk is particularly significant with respect to Xyrem, Defitelio and Vyxeos, in part due to payor sensitivity to the price of these products. Third party payors often require prior authorization for, require reauthorization for continuation of, or refuse to provide reimbursement for our products, and others may do so in the future. As a result of such practices, patients may not be able to obtain prescribed medications due to an inability to afford the medication. For example, we are experiencing increasingly restrictive conditions for reimbursement required by some third party payors for Xyrem, which may have a material effect on the overall level of reimbursement coverage for Xyrem. In addition, increases in reimbursement-related activities have extended the time required to fill prescriptions and could continue to do so in the future. Further, increasing consolidation among third party payors has led to fewer and larger third party payors with increased negotiating power. In particular, a small number of third party payors cover a significant portion of Xyrem patients. We have experienced and expect to continue to experience increasing pressure from third party payors to agree to discounts, rebates or other restrictive pricing terms for Xyrem. If we are unsuccessful in maintaining reimbursement for our products in a timely manner and at acceptable levels, if reimbursement for our products by third party payors is subject to restrictive pricing terms or overly restrictive reimbursement conditions, or if third party payors limit the indications for which our products will be reimbursed or refuse to provide reimbursement, the level of reimbursement for our products would be negatively impacted, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

In many countries, procedures to obtain price approvals, coverage and reimbursement can take considerable time after the receipt of marketing approval. We began to commercialize Defitelio in certain European countries in 2014. We are in the process of making pricing and reimbursement submissions with respect to Defitelio in those European countries where Defitelio is not yet launched, including in countries where pricing and reimbursement approvals are required for launch. We cannot predict the timing or outcome of Defitelio's launch in countries where we are engaged in pricing and reimbursement submissions. If we experience delays or unforeseen difficulties in obtaining favorable pricing and reimbursement approvals, planned launches in the affected countries would be delayed, or, if we are unable to ultimately obtain or maintain favorable pricing and reimbursement approvals in countries that represent significant markets, especially where a country's reimbursed price influences other countries, our growth prospects in Europe could be negatively affected. In addition, on March 30, 2016, the FDA approved our NDA for defibrotide for the treatment of adult and pediatric patients with VOD, also known as SOS, with renal or pulmonary dysfunction following HSCT. We launched Defitelio in the U.S. shortly after FDA approval, and our U.S. commercial launch is still at an early stage. On August 3, 2017, the FDA approved our NDA for Vyxeos for the treatment of adults with newly-diagnosed therapy-related AML or AML with myelodysplasia-related changes. We are in the process of launching Vyxeos in the U.S. Our ability to commercialize Defitelio and Vyxeos successfully in the U.S. will depend on, among other things, the continued availability of adequate coverage or reimbursement by U.S. government programs and third party payors. For more information, see the risk factor under the heading "While Xyrem remains our largest product, our success also depends on our ability to effectively commercialize our other products and, in the case of our product candidates, our ability to obtain regulatory approval in the U.S. and Europe and, if approved, to successfully launch and commercialize those product candidates. Our inability to do so could have a material adverse effect on our business, financial condition, results of operations and growth prospects" in this Part II, Item 1A.

We cannot predict actions third party payors may take, or whether they will limit the price approvals, coverage and level of reimbursement for our products or refuse to provide and maintain any approvals or coverage at all. For example, because some of our products compete in a market with both branded and generic products, obtaining and maintaining price approvals and reimbursement coverage by government and private payors may be more challenging than for new chemical entities for which no therapeutic alternatives exist. Additionally, in many countries, reimbursement guidelines and incentives provided to prescribing physicians by third party payors may have a

significant impact on the prescribing physicians' willingness to prescribe our products. For example, the U.S. federal government follows a Medicare severity diagnosis-related group, or MS-DRG, payment system for certain inpatient hospital services provided under Medicare, which some states also use for Medicaid. The MS-DRG system entitles a hospital to a fixed reimbursement based on discharge diagnoses rather than actual costs incurred in providing inpatient treatment, thereby increasing the incentive for the facility to limit or control expenditures for many healthcare products. For our products used in the inpatient hospital setting, there may not be sufficient reimbursement under the MS-DRG to fully cover the cost of our products. We cannot be sure that reimbursement amounts, or the lack of reimbursement, will not reduce the demand for, or the price of, our products. If reimbursement is not available or is available only at limited levels, we may not be able to effectively commercialize our products.

Third party payors frequently require that drug companies negotiate agreements with them that provide discounts or rebates from list prices or include other restrictive pricing terms. We have experienced increasing pressure from third party payors to agree to discounts, rebates or other restrictive pricing terms for products such as Xyrem. In addition, if our competitors reduce the prices of their products, or otherwise demonstrate that they are better or more cost effective than our

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products, this may result in a greater level of reimbursement for their products relative to our products, which would reduce our sales and harm our results of operations. The process for determining whether a payor will provide coverage for a product may be separate from the process for setting the price or reimbursement rate that the payor will pay for the product once coverage is approved. Third party payors may limit coverage to specific products on an approved list, or formulary, which might not include all of the approved products for a particular indication. Any such requirements could have a negative impact on revenues from sales of our products.

Payors also are increasingly considering new metrics as the basis for reimbursement rates, such as average sales price, average manufacturer price and actual acquisition cost. Certain states have begun to survey acquisition cost data for the purpose of setting Medicaid reimbursement rates. CMS surveys and publishes retail community pharmacy acquisition cost information in the form of National Average Drug Acquisition Cost files to provide state Medicaid agencies with a basis of comparison for their own reimbursement and pricing methodologies and rates. It may be difficult to project the impact of these evolving reimbursement mechanics on the willingness of payors to cover our products. Any failure to cover our products appropriately, in addition to legislative and regulatory changes and others that may occur in the future, could impact our ability to maximize revenues in the federal marketplace. A significant portion of our revenue from sales of Erwinaze is obtained through government payors, including Medicaid, and any failure to qualify for reimbursement for Erwinaze under those programs, including as a result of legislative changes to these programs, would have a material adverse effect on revenues from sales of Erwinaze.

We expect to experience pricing pressure in the U.S. in connection with the sale of our products due to managed healthcare, the increasing influence of health maintenance organizations, additional legislative proposals to curb healthcare costs and negative publicity regarding pricing and price increases generally, which could limit the prices that we charge for our products, including Xyrem, limit the commercial opportunities for our products and/or negatively impact revenues from sales of our products. In various EU member states we expect to be subject to continuous cost-cutting measures, such as lower maximum prices, lower or lack of reimbursement coverage and incentives to use cheaper, usually generic, products as an alternative. If we fail to successfully secure and maintain reimbursement coverage for our products or are significantly delayed in doing so, we will have difficulty achieving market acceptance of our products and our business will be harmed. We have periodically increased the price of Xyrem, most recently in July 2017, and we have made and may in the future make similar price increases on our other products. We cannot assure you that such price adjustments (particularly in the event a generic version with a lower price than Xyrem is introduced) will not negatively affect our reputation and our ability to secure and maintain reimbursement coverage for our products, which could negatively impact our sales volumes and revenue.

Health Technology Assessment, or HTA, of medicinal products is becoming an increasingly common part of the pricing and reimbursement procedures in some EU member states. These EU member states include the UK, France, Germany, Ireland, Italy, Spain, and Sweden. The HTA process, which is governed by the national laws of these countries, is the procedure according to which the assessment of the public health impact, therapeutic impact and the economic and societal impact of use of a given medicinal product in the national healthcare systems of the individual country is conducted. HTA generally focuses on the clinical efficacy and effectiveness, safety, cost, and cost-effectiveness of individual medicinal products, as well as their potential implications for the healthcare system. Those elements of medicinal products are compared with other treatment options available on the market. The outcome of HTA regarding specific medicinal products will often influence the pricing and reimbursement status granted to these medicinal products by the competent authorities of individual EU member states. Pursuant to Directive 2011/24/EU, a voluntary network of national authorities or bodies responsible for HTA in the individual EU member states was established. The purpose of the network is to facilitate and support the exchange of scientific information concerning HTAs. This could lead to harmonization between EU member states of the criteria taken into account in the conduct of HTA and their impact on pricing and reimbursement decisions.

The extent to which pricing and reimbursement decisions are influenced by the HTA of the specific medicinal product, however, still vary between EU member states and cannot be determined or anticipated in relation to our products at the present time. If we are unable to ultimately obtain favorable pricing and reimbursement approvals in countries that represent significant markets, especially where a country’s reimbursed price influences other countries,

our growth prospects in Europe could be negatively affected.

In the EU, our products are marketed through various channels and within different legal frameworks. In certain EU member states, reimbursement for unauthorized products may be provided through national named patient programs. Such reimbursement may no longer be available if authorization for named patient programs expire or are terminated or when marketing authorization is granted. In other EU member states, authorization and reimbursement policies may also delay commercialization of our products, or may adversely affect our ability to sell our products on a profitable basis. After initial price and reimbursement approvals, reductions in prices and changes in reimbursement levels can be triggered by multiple factors, including reference pricing systems and publication of discounts by third party payors or authorities in other countries. In the EU, prices can be reduced further by parallel distribution and parallel trade, or arbitrage between low-priced and high-priced member states.

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We are unable to predict what additional legislation, regulations or policies, if any, relating to the healthcare industry or third party coverage and reimbursement may be enacted in the future or what effect such legislation, regulations or policies would have on our business. Any cost containment measures, including those listed above, or other healthcare system reforms that are adopted, could negatively affect our growth prospects in Europe.

There also continue to be legislative proposals to amend U.S. laws to allow the importation into the U.S. of prescription drugs, which can be sold at prices that are regulated by the governments of various non-U.S. countries. The potential importation of prescription drugs could pose significant safety concerns for patients, increase the risk of counterfeit products becoming available in the market, and could also have a negative impact on prescription drug prices in the U.S. For example, the potential importation of Xyrem without the safeguard of our Xyrem REMS could harm patients and could also negatively impact Xyrem revenues.

Product liability and product recalls could harm our business.

The development, manufacture, testing, marketing and sale of pharmaceutical products are associated with significant risks of product liability claims or recalls. Side effects or adverse events known or reported to be associated with, or manufacturing defects in, the products sold by us could exacerbate a patient's condition, or could result in serious injury or impairments or even death. This could result in product liability claims and/or recalls of one or more of our products. Some of our products, including Xyrem and Prialt, have boxed warnings in their labels. In addition, in the EU, Defitelio's label includes an inverted black triangle that indicates the product is subject to additional monitoring to permit quick identification of new safety information, as a condition of authorization of Defitelio under "exceptional circumstances." In many countries, including in EU member states, national laws provide for strict (no-fault) liability which applies even where damages are caused both by a defect in a product and by the act or omission of a third party. Product liability claims may be brought by individuals seeking relief for themselves or by groups seeking to represent a class of injured patients. Further, third party payors, either individually or as a putative class, may bring actions seeking to recover monies spent on one of our products. The risk of product liability claims may also increase if a company receives a warning letter from a regulatory agency. Product liability claims are an inherent risk in our business, but we cannot predict the frequency, outcome or cost to defend any such claims.

Product liability insurance coverage is expensive, can be difficult to obtain and may not be available in the future on acceptable terms, or at all. Our product liability insurance may not cover all of the future liabilities we might incur in connection with the development, manufacture or sale of our products. In addition, we may not continue to be able to obtain insurance on satisfactory terms or in adequate amounts.

A successful claim or claims brought against us in excess of available insurance coverage could subject us to significant liabilities and could have a material adverse effect on our business, financial condition, results of operations and growth prospects. Such claims could also harm our reputation and the reputation of our products, adversely affecting our ability to market our products successfully. In addition, defending a product liability lawsuit is expensive and can divert the attention of key employees from operating our business.

Product recalls may be issued at our discretion or at the discretion of our suppliers, government agencies and other entities that have regulatory authority for pharmaceutical sales. Any recall of our products could materially adversely affect our business by rendering us unable to sell that product for some time and by adversely affecting our reputation. A recall could also result in product liability claims by individuals and third party payors. In addition, product liability claims could result in an investigation of the safety or efficacy of our products, our manufacturing processes and facilities, or our marketing programs conducted by the FDA, the EMA, or the competent authorities of the EU member states. Such investigations could also potentially lead to a recall of our products or more serious enforcement actions, limitations on the indications for which they may be used, or suspension, variation, or withdrawal of approval. Any such regulatory action by the FDA, the EC or the competent authorities of the EU member states could lead to product liability lawsuits as well.

We use hazardous materials in our manufacturing facilities, and any claims relating to the improper handling, storage, release or disposal of these materials could be time-consuming and expensive.

Our operations are subject to complex and increasingly stringent environmental, health and safety laws and regulations in the countries where we operate and, in particular, in Italy and Ireland where we have manufacturing

facilities. Environmental and health and safety authorities in the relevant jurisdictions administer laws, which implement EU directives and regulations governing, among other matters, the emission of pollutants into the air (including the workplace), the discharge of pollutants into bodies of water, the storage, use, handling and disposal of hazardous substances, the exposure of persons to hazardous substances, and the general health, safety and welfare of employees and members of the public. In certain cases, such laws, directives and regulations may impose strict liability for pollution of the environment and contamination resulting from spills, disposals or other releases of hazardous substances or waste or any migration of such hazardous substances or waste. Costs, damages and/or fines may result from the presence, investigation and remediation of such contamination at properties currently or formerly owned, leased or operated by us or at off-site locations, including where we have arranged for the disposal of

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hazardous substances or waste. In addition, we may be subject to third party claims, including for natural resource damages, personal injury and property damage, in connection with such contamination. Our manufacturing activities in Italy and Ireland involve the controlled storage, use and disposal of chemicals and solvents. Even if our safety procedures for handling and disposing of these hazardous materials comply with the standards prescribed by these EU laws and regulations, we cannot completely eliminate the risk of contamination or injury from hazardous materials. If an accident occurs, an injured party could seek to hold us liable for any damages that result and any liability could exceed the limits or fall outside the coverage of our insurance. We may not be able to maintain insurance on acceptable terms, or at all. We may incur significant costs to comply with current or future EU environmental laws and regulations.

Risks Related to Our Financial Condition and Results

We have incurred substantial debt, which could impair our flexibility and access to capital and adversely affect our financial position.

As of June 30, 2017, we had total indebtedness of approximately $1.8 billion, which included $694.8 million in outstanding term loan indebtedness and $500.0 million in outstanding revolving credit borrowings under a secured credit agreement that we entered into in June 2015 and subsequently amended in July 2016, which we refer to as the amended credit agreement, and $575.0 million of outstanding indebtedness under our 1.875% exchangeable senior notes due 2021, or the 2021 Notes, which were issued in August 2014.

Our debt may:

- limit our ability to borrow additional funds for working capital, capital expenditures, acquisitions or other general business purposes;
- limit our ability to use our cash flow or obtain additional financing for working capital, capital expenditures, acquisitions or other general business purposes;
- require us to use a substantial portion of our cash flow from operations to make debt service payments;
- limit our flexibility to plan for, or react to, changes in our business and industry;
- result in dilution to our existing shareholders in the event exchanges of our 2021 Notes are settled in our ordinary shares;
- place us at a competitive disadvantage compared to our less leveraged competitors; and
- increase our vulnerability to the impact of adverse economic and industry conditions.

Our ability to meet our debt service obligations will depend on our future performance, which will be subject to financial, business and other factors affecting our operations, many of which are beyond our control. If we do not have sufficient funds to meet our debt service obligations, we may be required to refinance or restructure all or part of our existing debt, sell assets, borrow more money or sell securities, none of which we can assure you that we would be able to do in a timely manner, or at all.

Covenants in our amended credit agreement restrict our business and operations in many ways and if we do not effectively manage our covenants, our financial conditions and results of operations could be adversely affected.

The amended credit agreement provides for a $750.0 million principal amount term loan due in July 2021 and a $1.25 billion revolving credit facility, with loans under such revolving credit facility due in July 2021, subject to early mandatory repayments under certain circumstances. The amended credit agreement contains various covenants that, among other things, limit our ability and/or our restricted subsidiaries' ability to:

- incur or assume liens or additional debt or provide guarantees in respect of obligations of other persons;
- issue redeemable preferred stock;
- pay dividends or distributions or redeem or repurchase capital stock;
- prepay, redeem or repurchase certain debt;
- make loans, investments, acquisitions (including acquisitions of exclusive licenses) and capital expenditures;
- enter into agreements that restrict distributions from our subsidiaries;
- sell assets and capital stock of our subsidiaries;
- enter into certain transactions with affiliates; and

- consolidate or merge with or into, or sell substantially all of our assets to, another person.

The amended credit agreement also includes financial covenants that require us to maintain a maximum secured leverage ratio and a minimum interest coverage ratio. Our ability to comply with these financial covenants may be affected by events beyond our control. In addition, the covenants under the amended credit agreement could restrict our operations, particularly our ability to respond to changes in our business or to take specified actions to take advantage of certain business opportunities that may be presented to us. Our failure to comply with any of the covenants could result in a default under the amended credit agreement, which could permit the lenders to declare all or part of any outstanding borrowings to be immediately due and payable, or to refuse to permit additional borrowings under the revolving credit facility. A default under the amended credit

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agreement could also lead to a default under other debt agreements or obligations, including the indenture governing our 2021 Notes.

In addition, the holders of our 2021 Notes have the ability to require us to repurchase their notes for cash if we undergo certain fundamental changes, such as specified change of control transactions, our liquidation or dissolution, or the delisting of our ordinary shares from The NASDAQ Global Select Market. Moreover, upon exchange of the 2021 Notes, unless we elect to cause to be delivered solely ordinary shares to settle such exchange, we will be required to make cash payments in respect of the 2021 Notes being exchanged. In this regard, it is our intent and policy to settle the principal amount of the 2021 Notes in cash upon exchange. However, we may not have enough available cash or be able to obtain financing at the time we are required to make any required repurchases of surrendered 2021 Notes or to pay cash upon exchanges of 2021 Notes. Our failure to repurchase 2021 Notes at a time when the repurchase is required by the indenture governing the 2021 Notes or to pay any cash payable on future exchanges of the 2021 Notes as required by the indenture governing the 2021 Notes would constitute a default under that indenture. A default under that indenture could also lead to a default under other debt agreements or obligations, including the amended credit agreement. If the repayment of the related indebtedness were to be accelerated, we may not have sufficient funds to repay the related indebtedness, which could have a material adverse effect on our financial condition and our business. In this regard, if we are unable to repay amounts under the amended credit agreement, the lenders under the amended credit agreement could proceed against the collateral granted to them to secure that debt, which would seriously harm our business.

We may not be able to generate sufficient cash to service our debt obligations.

Our ability to make payments on and to refinance our debt will depend on our future financial and operating performance, which is subject to prevailing economic and competitive conditions and to certain financial, business and other factors beyond our control. We may be unable to maintain a level of positive cash flows from operating activities sufficient to permit us to pay the principal and interest on our debt.

If our cash flows and capital resources are insufficient to fund our debt service obligations, we may be forced to reduce or delay investments and capital expenditures, seek additional capital or restructure or refinance our debt. These alternative measures may not be successful and may not permit us to meet our scheduled debt service obligations. In the absence of such cash flows and resources, we could face substantial liquidity problems and might be required to dispose of material assets or operations to meet our debt service and other obligations. The amended credit agreement restricts our ability to dispose of assets, use the proceeds from any disposition of assets and refinance our indebtedness. We may not be able to consummate or obtain proceeds from such dispositions, and any such proceeds may not be adequate to meet any debt service obligations then due.

In addition, our borrowings under the amended credit agreement are, and are expected to continue to be, at variable rates of interest and expose us to interest rate risk. If interest rates increase, our debt service obligations on the variable rate indebtedness would increase even if the amount borrowed remained the same, and our net income would decrease.

To continue to grow our business, we will need to commit substantial resources, which could result in future losses or otherwise limit our opportunities or affect our ability to operate our business.

The scope of our business and operations has grown substantially since 2012 through a series of transactions, including the business combination between Jazz Pharmaceuticals, Inc. and Azur Pharma, which we refer to as the Azur Merger, our acquisition of EUSA Pharma Inc., the Gentium Acquisition and the Celator Acquisition. To continue to grow our business over the longer term, we will need to commit substantial additional resources to in-licensing and/or acquiring new products and product candidates, and to costly and time-consuming product development and clinical trials of our product candidates. We also intend to continue to invest in our commercial operations in an effort to grow sales of our current and potential future products. Our ongoing capital requirements will depend on many factors, including many of those discussed above, such as:

- the revenues from our commercial products, which may be affected by many factors, including the extent of generic or other competition for Xyrem or our other products;
- the costs of our commercial operations;

- the costs of integration activities related to any future strategic transactions we may engage in;
- the cost of acquiring and/or in-licensing any new products and product candidates;
- the scope, rate of progress, results and costs of our development and clinical activities;
- the cost and timing of obtaining regulatory approvals and of compliance with laws and regulations;
- the cost of preparing, filing, prosecuting, defending and enforcing patent claims and other intellectual property rights;
- the cost of investigations, litigation and/or settlements related to regulatory oversight and third party claims; and
- changes in laws and regulations, including, for example, healthcare reform legislation.

Our strategy includes the expansion of our business through the acquisition or in-licensing and development of additional marketed products or product candidates that are in late-stage development. We cannot assure you that we will continue to identify attractive opportunities. Even if appropriate opportunities are available, in order to compete successfully to acquire

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attractive products or product candidates in the current business climate, we may have to pay higher prices for assets than may have been paid historically, and we may not have the financial resources necessary to pursue them. As a result, we may be unable to expand our business if we do not have sufficient capital or cannot borrow or raise additional capital on attractive terms. In particular, our substantial indebtedness may limit our ability to borrow additional funds for acquisitions or to use our cash flow or obtain additional financing for future acquisitions. In addition, if we use a substantial amount of our funds to acquire or in-license products or product candidates, we may not have sufficient additional funds to conduct all of our operations in the manner we would otherwise choose.

We may not be able to access the capital and credit markets on terms that are favorable to us, or at all.

During the past several years, domestic and international financial markets have experienced extreme disruption from time to time, including, among other things, high volatility and significant declines in stock prices and severely diminished liquidity and credit availability for both borrowers and investors. We expect to opportunistically seek access to the capital and credit markets to supplement our existing cash balances, cash we expect to generate from operations and funds available under our revolving credit facility to satisfy our needs for working capital, capital expenditures and debt service requirements or to continue to grow our business over the longer term through product acquisition and in-licensing, product development and clinical trials of product candidates, and expansion of our commercial operations. In the event of adverse capital and credit market conditions, including as a result of the potential for the UK's withdrawal from the EU to contribute to sustained instability in the global financial markets, we may not be able to obtain capital market financing or credit on favorable terms, or at all, which could have a material adverse effect on our business and growth prospects. Changes in our credit ratings issued by nationally recognized credit rating agencies could adversely affect our cost of financing and have an adverse effect on the market price of our securities.

We may not be able to successfully maintain our tax rates, which could adversely affect our business and financial condition, results of operations and growth prospects.

We are incorporated in Ireland and maintain subsidiaries in North America and a number of other foreign jurisdictions. We are able to achieve a low average tax rate through the performance of certain functions and ownership of certain assets in tax-efficient jurisdictions, together with intra-group service and transfer pricing agreements, each on an arm's length basis. However, changes in tax laws in any of these jurisdictions could adversely affect our ability to do so in the future. Taxing authorities, such as the U.S. Internal Revenue Service, or the IRS, actively audit and otherwise challenge these types of arrangements, and have done so in the pharmaceutical industry. We are subject to reviews and audits by the IRS and other taxing authorities from time to time, and the IRS or other taxing authority may challenge our structure and transfer pricing arrangements through an audit or lawsuit. For example, in December 2015, we received proposed tax assessment notices from the French tax authorities for 2012 and 2013 relating to certain transfer pricing adjustments. The notices propose additional taxes of approximately $43.7 million, including interest and penalties, through the date of the assessment translated at the foreign exchange rate at June 30, 2017. Responding to or defending against this and other challenges from taxing authorities could be expensive and consume time and other resources, and divert management's time and focus from operating our business. We generally cannot predict whether taxing authorities will conduct an audit or file a lawsuit challenging our structure, the cost involved in responding to any such audit or lawsuit, or the outcome. If we are unsuccessful, we may be required to pay taxes for prior periods, interest, fines or penalties, and may be obligated to pay increased taxes in the future, any of which could require us to reduce our operating expenses, decrease efforts in support of our products or seek to raise additional funds. Any of these actions could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

The IRS may not agree with the conclusion that we should be treated as a foreign corporation for U.S. federal tax purposes.

Although we are incorporated in Ireland, the IRS may assert that we should be treated as a U.S. corporation (and, therefore, a U.S. tax resident) for U.S. federal tax purposes pursuant to Section 7874 of the Internal Revenue Code of 1986, as amended, or the Code. For U.S. federal tax purposes, a corporation generally is considered a tax resident in the jurisdiction of its organization or incorporation. Because we are an Irish incorporated entity, we would be

classified as a foreign corporation (and, therefore, a non-U.S. tax resident) under these rules. Section 7874 of the Code provides an exception under which a foreign incorporated entity may, in certain circumstances, be treated as a U.S. corporation for U.S. federal tax purposes. Because we indirectly acquired all of Jazz Pharmaceuticals, Inc.'s assets through the acquisition of the shares of Jazz Pharmaceuticals, Inc. common stock in the Azur Merger, the IRS could assert that we should be treated as a U.S. corporation for U.S. federal tax purposes under Section 7874. For us to be treated as a foreign corporation for U.S. federal tax purposes under Section 7874 of the Code, either (1) the former stockholders of Jazz Pharmaceuticals, Inc. must have owned (within the meaning of Section 7874 of the Code) less than 80% (by both vote and value) of our ordinary shares by reason of holding shares in Jazz Pharmaceuticals, Inc. after the Azur Merger (the "ownership test"), or (2) we must have substantial business activities in Ireland after the Azur Merger (taking into account the activities of our expanded affiliated group). The Jazz Pharmaceuticals, Inc. stockholders owned less than 80% of our share capital immediately after the Azur Merger by reason of their ownership of shares of Jazz Pharmaceuticals, Inc. common stock. As a result, we believe that we should be treated as a

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foreign corporation for U.S. federal tax purposes under current law. It is possible that the IRS could disagree with the position that the ownership test is satisfied and assert that Section 7874 of the Code applies to treat us as a U.S. corporation following the Azur Merger. There is limited guidance regarding the Code Section 7874 provisions, including the application of the ownership test described above. The IRS continues to scrutinize transactions that are potentially subject to Section 7874, and has issued several sets of final and temporary regulations under Section 7874 since 2012. In April 2016, the IRS issued temporary regulations under Section 7874 reflecting guidance that the IRS previously announced in notices dated September 2014 and November 2015, as well as additional rules. In January 2017, the IRS issued final and temporary regulations under Section 7874 making further revisions to the prior guidance. We do not expect these regulations to affect the U.S. tax consequences of the Azur Merger. Nevertheless, new statutory and/or regulatory provisions under Section 7874 of the Code or otherwise could be enacted that adversely affect our status as a foreign corporation for U.S. federal tax purposes, and any such provisions could have retroactive application to us, Jazz Pharmaceuticals, Inc., our respective shareholders and/or the Azur Merger. For more information, see the risk factor under the heading “Future changes to the tax laws under which we expect to be treated as a foreign corporation for U.S. federal tax purposes or to other tax laws relating to multinational corporations could adversely affect us,” in this Part II, Item 1A.

Section 7874 of the Code limits Jazz Pharmaceuticals, Inc.’s ability to utilize its U.S. tax attributes to offset certain U.S. taxable income, if any, generated by certain taxable transactions.

Following certain acquisitions of a U.S. corporation by a foreign corporation, Section 7874 of the Code can limit the ability of the acquired U.S. corporation and its U.S. affiliates to utilize U.S. tax attributes such as net operating losses, or NOLs, to offset U.S. taxable income resulting from certain transactions. Based on the limited guidance available, this limitation applies to us. As a result, after the Azur Merger, Jazz Pharmaceuticals, Inc. has not been able and will continue to be unable, for a period of time, to utilize its U.S. tax attributes to offset its U.S. taxable income, if any, resulting from certain taxable transactions. Notwithstanding this limitation, we plan to fully utilize Jazz Pharmaceuticals, Inc.’s U.S. NOLs prior to their expiration. As a result of this limitation, however, it may take Jazz Pharmaceuticals, Inc. longer to use its NOLs. Moreover, contrary to these plans, it is possible that the limitation under Section 7874 of the Code on the utilization of U.S. tax attributes could prevent Jazz Pharmaceuticals, Inc. from fully utilizing its U.S. tax attributes prior to their expiration if Jazz Pharmaceuticals, Inc. does not generate sufficient taxable income.

Jazz Pharmaceuticals, Inc.’s ability to use its net operating losses to offset potential taxable income and related income taxes that would otherwise be due could be subject to further limitations if we do not generate taxable income in a timely manner or if the “ownership change” provisions of Sections 382 and 383 of the Code result in further annual limitations.

Jazz Pharmaceuticals, Inc. has a significant amount of NOLs. Our ability to use these NOLs to offset potential future taxable income and related income taxes that would otherwise be due is dependent upon our generation of future taxable income before the expiration dates of the NOLs, and we cannot predict with certainty when, or whether, Jazz Pharmaceuticals, Inc. will generate sufficient taxable income to use all of the NOLs. In addition, realization of NOLs to offset potential future taxable income and related income taxes that would otherwise be due is subject to annual limitations under the “ownership change” provisions of Sections 382 and 383 of the Code and similar state provisions, which may result in the expiration of additional NOLs before future utilization. In general, an “ownership change” occurs if, during a three-year rolling period, there is a change of 50% or more in the percentage ownership of a company by 5% shareholders (and certain persons treated as 5% shareholders), as defined in the Code and the U.S. Treasury Department regulations, or Treasury Regulations, promulgated thereunder. In this regard, we currently estimate that, as a result of these ownership change provisions, we have an annual limitation on the utilization of certain NOLs and credits of $281.2 million, before tax effect, for 2017, $142.0 million, before tax effect, for 2018 and a combined total of $341.9 million, before tax effect, for 2019 to 2032.

However, Sections 382 and 383 of the Code are extremely complex provisions with respect to which there are many uncertainties, and we have not requested a ruling from the IRS to confirm our analysis of the ownership change limitations related to the NOLs generated by Jazz Pharmaceuticals, Inc. Therefore, we have not established whether

the IRS would agree with our analysis regarding the application of Sections 382 and 383 of the Code. If the IRS were to disagree with our analysis, or if Jazz Pharmaceuticals, Inc. experiences additional ownership changes in the future, we could be subject to further annual limitations on the use of the NOLs to offset potential taxable income and related income taxes that would otherwise be due.

Future changes to the tax laws under which we expect to be treated as a foreign corporation for U.S. federal tax purposes or to other tax laws relating to multinational corporations could adversely affect us.

As described above, under current law, we believe that we should be treated as a foreign corporation for U.S. federal tax purposes. However, changes to the Code or the Treasury Regulations or other IRS guidance promulgated thereunder, including under Section 7874 of the Code, could adversely affect our status as a foreign corporation for U.S. federal tax purposes or could otherwise affect our effective tax rate, and any such changes could have prospective or retroactive application. Recent legislative proposals have aimed to expand the scope of U.S. corporate tax residence. This legislation, if passed, could adversely affect us. In addition, the Trump Administration and many members of the U.S. Congress have called for comprehensive tax reform and have stated that U.S. tax reform should be a priority. Although it is not possible to determine the

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impact of any tax reform on us, tax reform, if enacted, could adversely affect our effective tax rate and our results of operations and financial condition.

The U.S. Congress, the EU, the Organization for Economic Co-operation and Development and other government agencies in jurisdictions where we and our affiliates do business have also had an extended focus on issues related to the taxation of multinational corporations. One example is in the area of "base erosion and profit shifting," where payments are made between affiliates from a jurisdiction with high tax rates to a jurisdiction with lower tax rates. As a result, the tax laws in Ireland, the U.S. and other countries in which we and our affiliates do business could change on a prospective or retroactive basis, and any such changes could adversely affect us.

We have significant intangible assets and goodwill. Consequently, the future impairment of our intangible assets and goodwill may significantly impact our profitability.

Our intangible assets and goodwill are significant. As of June 30, 2017, we had recorded $4.0 billion of intangible assets and goodwill related to our past acquisitions. Intangible assets and goodwill are subject to an impairment analysis whenever events or changes in circumstances indicate the carrying amount of the asset may not be recoverable. Additionally, goodwill and indefinite-lived assets are subject to an impairment test at least annually. Events giving rise to impairment are an inherent risk in the pharmaceutical industry and cannot be predicted. Our results of operations and financial position in future periods could be negatively impacted should future impairments of intangible assets or goodwill occur.

Our financial results have been and may continue to be adversely affected by foreign currency exchange rate fluctuations.

We have significant operations in Europe as well as in the U.S., but we report revenues, costs and earnings in U.S. dollars. Our primary currency translation exposure relates to our subsidiaries that have functional currencies denominated in the euro. Exchange rates between the U.S. dollar and the euro have fluctuated and are likely to continue to fluctuate from period to period. Because our financial results are reported in U.S. dollars, we are exposed to foreign currency exchange risk as the functional currency financial statements of non-U.S. subsidiaries are translated to U.S. dollars for reporting purposes. To the extent that revenue and expense transactions are not denominated in the functional currency, we are also subject to the risk of transaction losses. For example, because our Defitelio and Erwinase product sales outside of the U.S. are primarily denominated in the euro, our sales of those products have been and may continue to be adversely affected by fluctuations in foreign currency exchange rates. In this regard, when the U.S. dollar strengthens against a foreign currency, the relative value of sales made in the foreign currency decreases. Conversely, when the U.S. dollar weakens against a foreign currency, the relative value of such sales increases. Accordingly, increases in the value of the U.S. dollar relative to foreign currencies, primarily the euro, could adversely affect our foreign revenues, perhaps significantly. In addition, as we continue to expand our international operations, we will conduct more transactions in currencies other than the U.S. dollar, which could increase our foreign currency exchange risk. Given the volatility of exchange rates, as well as our expanding operations, we cannot assure you that we will be able to effectively manage currency transaction and/or translation risks. We use foreign exchange forward contracts to manage currency risk primarily related to certain intercompany balances denominated in non-functional currencies. These foreign exchange forward contracts are not designated as hedges; gains and losses on these derivative instruments are designed to offset gains and losses on the underlying balance sheet exposures. Fluctuations in foreign currency exchange rates could have a material adverse effect on our results of operations and financial condition.

Risks Related to Our Ordinary Shares

The market price of our ordinary shares has been volatile and may continue to be volatile in the future, and the value of your investment could decline significantly.

The market price for our ordinary shares has fluctuated significantly from time to time, for example, varying between a high of $162.01 on April 27, 2017 and a low of $96.74 on November 3, 2016 during the period from December 31, 2015 through June 30, 2017. The market price of our ordinary shares is likely to continue to be volatile and subject to significant price and volume fluctuations in response to market, industry and other factors, including the risk factors

described above. The stock market in general, including the market for life sciences companies, has experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. In particular, negative publicity regarding pricing and price increases by pharmaceutical companies has negatively impacted, and may continue to negatively impact, the market for life sciences companies. These broad market and industry factors have harmed, and in the future may seriously harm, the market price of our ordinary shares, regardless of our operating performance.

Our share price may be dependent upon the valuations and recommendations of the analysts who cover our business. If our results do not meet these analysts' forecasts, the expectations of our investors or the financial guidance we provide to investors in any period, the market price of our ordinary shares could decline. Our ability to meet analysts' forecasts, investors'

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expectations and our financial guidance is substantially dependent on our ability to maintain or increase sales of Xyrem and Defitelio and to successfully commercialize Vyxeos in the U.S. In addition, we will need to minimize future supply disruptions of Erwinaze in order to meet revenue expectations for Erwinaze. The risks and uncertainties associated with our ability to maintain or increase sales of Xyrem, Erwinaze and Defitelio and to successfully commercialize Vyxeos include those discussed elsewhere in these risk factors. In the past, following periods of volatility in the market or significant price decline, securities class-action litigation has often been instituted against companies. Such litigation, if instituted against us, could result in substantial costs and diversion of management's attention and resources, which could materially and adversely affect our business, financial condition, results of operations and growth prospects.

In addition, the market price of our ordinary shares may decline if the effects of our transactions, including the Celator Acquisition and/or potential future acquisitions, on the financial results of our company are not consistent with the expectations of financial analysts or investors. The market price of our ordinary shares could also be affected by possible sales of our ordinary shares by holders of our 2021 Notes who may view the 2021 Notes as a more attractive means of equity participation in our company and by hedging or arbitrage trading activity involving our ordinary shares by the holders of these notes.

Future sales of our ordinary shares in the public market could cause our share price to fall.

Sales of a substantial number of our ordinary shares in the public market, including sales by members of our management or board of directors, or the perception that these sales might occur, could depress the market price of our ordinary shares and could impair our ability to raise capital through the sale of additional equity or equity-related securities. As of July 31, 2017, we had 60,064,963 ordinary shares outstanding, all of which shares are eligible for sale in the public market, subject in some cases to the volume limitations and manner of sale and other requirements under Rule 144. In addition, future issuances by us of our ordinary shares upon the exercise or settlement of equity-based awards and exchanges of our 2021 Notes would dilute existing shareholders' ownership interests in our company, and any sales in the public market of these ordinary shares, or the perception that these sales might occur, could also adversely affect the market price of our ordinary shares.

Moreover, we have in the past and may in the future grant rights to some of our shareholders that require us to register the resale of our ordinary shares on behalf of these shareholders and/or facilitate offerings of ordinary shares held by these shareholders, including in connection with potential future acquisitions of additional products, product candidates or companies. We have also filed registration statements to register the sale of our ordinary shares reserved for issuance under our equity incentive and employee stock purchase plans, and we intend to file additional registration statements to register any shares automatically added each year to the share reserves under these plans.

We are subject to Irish law, which differs from the laws in effect in the U.S. and may afford less protection to holders of our securities.

It may not be possible to enforce court judgments obtained in the U.S. against us in Ireland based on the civil liability provisions of the U.S. federal or state securities laws. In addition, there is some uncertainty as to whether the courts of Ireland would recognize or enforce judgments of U.S. courts obtained against us or our directors or officers based on the civil liability provisions of the U.S. federal or state securities laws or hear actions against us or those persons based on those laws. We have been advised that the U.S. currently does not have a treaty with Ireland providing for the reciprocal recognition and enforcement of judgments in civil and commercial matters. Therefore, a final judgment for the payment of money rendered by any U.S. federal or state court based on civil liability, whether or not based solely on U.S. federal or state securities laws, would not automatically be enforceable in Ireland.

As an Irish company, we are governed by the Irish Companies Act 2014, which differs in some material respects from laws generally applicable to U.S. corporations and shareholders, including, among others, differences relating to interested director and officer transactions and shareholder lawsuits. Likewise, the duties of directors and officers of an Irish company are generally owed to the company only. Shareholders of Irish companies generally do not have a personal right of action against directors or officers of the company and may exercise such rights of action on behalf of the company only in limited circumstances. Accordingly, holders of our securities may have more difficulty protecting their interests than would holders of securities of a corporation incorporated in a jurisdiction of the U.S.

Our articles of association, shareholder rights agreement, Irish law and the indenture governing our 2021 Notes contain provisions that could delay or prevent a takeover of us by a third party.

Our articles of association could delay, defer or prevent a third party from acquiring us, despite the possible benefit to our shareholders, or otherwise adversely affect the price of our ordinary shares. For example, our articles of association:

- impose advance notice requirements for shareholder proposals and nominations of directors to be considered at shareholder meetings;
- stagger the terms of our board of directors into three classes;
- require the approval of a supermajority of the voting power of the shares of our share capital entitled to vote generally at a meeting of shareholders to amend or repeal our articles of association; and

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- permit our board of directors to issue one or more series of preferred shares with rights and preferences, as our shareholders may determine by ordinary resolution.

In April 2017, we adopted a shareholder rights agreement, or rights agreement, with a 12-month term under which shareholders have certain ordinary share purchase rights if a person or group acquires 10% (or 20% in the case of a "13G Investor" as defined in the rights agreement) or more of our outstanding ordinary shares without the prior approval of our board of directors. The rights agreement could make it more difficult for a person or group to acquire a majority of our outstanding ordinary shares, and could otherwise prevent or delay an acquisition of us. The rights agreement could also reduce the price that investors might be willing to pay for our ordinary shares and result in the market price of our ordinary shares being lower than it would be without the rights agreement. In addition, the existence of the rights agreement itself may deter a potential acquiror from pursuing any acquisition of us at all. As a result, either by operation of the rights agreement or by its potential deterrent effect, acquisitions of us that our shareholders may consider in their best interests may not occur.

In addition to our articles of association and the rights agreement, several mandatory provisions of Irish law could prevent or delay an acquisition of us. For example, Irish law does not permit shareholders of an Irish public limited company to take action by written consent with less than unanimous consent, and the shareholder approval requirements for certain types of transactions differ from those in the U.S., and in some cases are greater, under Irish law. We are also subject to various provisions of Irish law relating to mandatory bids, voluntary bids, requirements to make a cash offer and minimum price requirements, as well as substantial acquisition rules and rules requiring the disclosure of interests in our shares in certain circumstances. Furthermore, the indenture governing our 2021 Notes requires us to repurchase the notes for cash if we undergo certain fundamental changes and, in certain circumstances, to increase the exchange rate for a holder of 2021 Notes. A takeover of us may trigger the requirement that we purchase our 2021 Notes and/or increase the exchange rate, which could make it more costly for a potential acquiror to engage in a business combination transaction with us.

These provisions, whether alone or together, may discourage potential takeover attempts, discourage bids for our ordinary shares at a premium over the market price or adversely affect the market price of, and the voting and other rights of the holders of, our ordinary shares. These provisions, whether alone or together, could also discourage proxy contests and make it more difficult for you and other shareholders to elect directors other than the candidates nominated by our board.

We have never declared or paid dividends on our capital stock and we do not anticipate paying dividends in the foreseeable future.

Other than funds we have allocated for the purposes of supporting our share repurchase program authorized in November 2016, we anticipate that we will retain all earnings, if any, to support our operations and our proprietary drug development programs, acquire or in-license additional products and product candidates, and pursue other opportunities. If we propose to pay dividends in the future, we must do so in accordance with Irish law, which provides that distributions including dividend payments, share repurchases and redemptions be funded from "distributable reserves." In addition, our ability to pay cash dividends on or repurchase our ordinary shares is restricted under the terms of the amended credit agreement. Any future determination as to the payment of dividends will, subject to Irish legal requirements, be at the sole discretion of our board of directors and will depend on our financial condition, results of operations, capital requirements, compliance with the terms of the amended credit agreement and other factors our board of directors deems relevant. Accordingly, holders of our ordinary shares must rely on increases in the trading price of their shares for returns on their investment in the foreseeable future.

A transfer of our ordinary shares may be subject to Irish stamp duty.

In certain circumstances, the transfer of shares in an Irish incorporated company will be subject to Irish stamp duty, which is a legal obligation of the buyer. This duty is currently charged at the rate of 1.0% of the price paid or the market value of the shares acquired, if higher. Because our ordinary shares are traded on a recognized stock exchange in the U.S., an exemption from this stamp duty is available to transfers by shareholders who hold our ordinary shares beneficially through brokers which in turn hold those shares through the Depositary Trust Company, or DTC, to holders who also hold through DTC. However, a transfer by or to a record holder who holds our ordinary shares

directly in his, her or its own name could be subject to this stamp duty. We, in our absolute discretion and insofar as the Irish Companies Act 2014 or any other applicable law permits, may, or may provide that a subsidiary of ours will, pay Irish stamp duty arising on a transfer of our ordinary shares on behalf of the transferee of such ordinary shares. If stamp duty resulting from the transfer of our ordinary shares which would otherwise be payable by the transferee is paid by us or any of our subsidiaries on behalf of the transferee, then in those circumstances, we will, on our behalf or on behalf of our subsidiary (as the case may be), be entitled to (i) seek reimbursement of the stamp duty from the transferee, (ii) set-off the stamp duty against any dividends payable to the transferee of those ordinary shares and (iii) claim a first and permanent lien on the ordinary shares on which stamp duty has been paid by us or our subsidiary for the amount of stamp duty paid. Our lien shall extend to all dividends paid on those ordinary shares.

Dividends paid by us may be subject to Irish dividend withholding tax.

In certain circumstances, as an Irish tax resident company, we will be required to deduct Irish dividend withholding tax (currently at the rate of 20%) from dividends paid to our shareholders. Shareholders that are resident in the U.S., EU countries

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(other than Ireland) or other countries with which Ireland has signed a tax treaty (whether the treaty has been ratified or not) generally should not be subject to Irish withholding tax so long as the shareholder has provided its broker, for onward transmission to our qualifying intermediary or other designated agent (in the case of shares held beneficially), or us or our transfer agent (in the case of shares held directly), with all the necessary documentation by the appropriate due date prior to payment of the dividend. However, some shareholders may be subject to withholding tax, which could adversely affect the price of our ordinary shares.

Our auditor, like other independent registered public accounting firms operating in Ireland and a number of other European countries, is not currently permitted to be subject to inspection by the U.S. Public Company Accounting Oversight Board, or the PCAOB, and as such, our investors currently do not have the benefits of PCAOB oversight.

As an auditor of companies that are publicly-traded in the U.S. and as a firm registered with the PCAOB, our independent registered public accounting firm is required by the laws of the U.S. to undergo regular inspections by the PCAOB to assess its compliance with the laws of the U.S. and the professional standards of the PCAOB. However, because our auditor is located in Ireland, a jurisdiction where the PCAOB is currently unable to conduct inspections, our auditor is not currently inspected by the PCAOB. Inspections of other auditors conducted by the PCAOB outside of Ireland have at times identified deficiencies in those auditor's audit procedures and quality control procedures, which may be addressed as part of the inspection process to improve future audit quality. The lack of PCAOB inspections in Ireland prevents the PCAOB from regularly evaluating our auditor's audits and its quality control procedures. In addition, the inability of the PCAOB to conduct auditor inspections in Ireland makes it more difficult to evaluate the effectiveness of our auditor's audit procedures or quality control procedures as compared to auditors located outside of Ireland that are subject to regular PCAOB inspections. As a result, our investors are deprived of the benefits of PCAOB inspections, and may lose confidence in our reported financial information and procedures and the quality of our financial statements.

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Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Issuer Purchases of Equity Securities

The following table summarizes purchases of our ordinary shares made by or on behalf of us or any of our "affiliated purchasers" as defined in Rule 10b-18(a)(3) under the Securities Exchange Act of 1934, as amended, during each fiscal month during the three-month period ended June 30, 2017:

	Total Number of Shares Purchased (1)	Average Price Paid per Share (2)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (3)	Maximum Number (or Approximate Dollar Value) of Shares that May Yet Be Purchased Under the Plans or Programs (4)
April 1 - April 30, 2017	—	$—	—	$267,631,573
May 1 - May 31, 2017	37,000	$151.42	37,000	$262,029,855
June 1 - June 30, 2017	75,000	$151.47	75,000	$250,671,385
Total	112,000	$151.45	112,000	

(1) This table does not include ordinary shares that we withheld in order to satisfy minimum tax withholding requirements in connection with the vesting and release of restricted stock units.

(2) Average price paid per ordinary share includes brokerage commissions.

(3) The ordinary shares reported in the table above were purchased pursuant to our publicly announced share repurchase program. In November 2016, we announced that our board of directors authorized the use of up to $300 million to repurchase our ordinary shares. This authorization has no expiration date.

(4) The dollar amount shown represents, as of the end of each period, the approximate dollar value of ordinary shares that may yet be purchased under our publicly announced share repurchase program, exclusive of any brokerage commissions. The timing and amount of repurchases will depend on a variety of factors, including the price of our ordinary shares, alternative investment opportunities, restrictions under our credit agreement, corporate and regulatory requirements and market conditions, and may be modified, suspended or otherwise discontinued at any time without prior notice.

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Item 5. Other Information

Results of Matters Presented at the 2017 Annual General Meeting of Shareholders

On August 3, 2017, we held our 2017 annual general meeting of shareholders, or the annual meeting, at our corporate headquarters in Dublin, Ireland. At the annual meeting, our shareholders voted on four proposals, each of which is described in more detail in our definitive proxy statement on Schedule 14A as filed with the SEC on June 20, 2017, or the Proxy Statement. The results of the matters presented at the annual meeting, based on the presence in person or by proxy of holders of 54,252,175 of the 60,090,955 ordinary shares entitled to vote, are described below.

Proposal 1

Proposal 1 was to elect each of the three nominees for director to a three-year term as a Class III director of the company to serve until our 2020 annual general meeting of shareholders and until his or her successor is elected and qualified. Each of the three nominees for director was elected as follows:

Director Nominees	For	Against	Abstain	Broker Non-Votes
Bruce C. Cozadd	40,149,265	9,988,616	524,152	3,590,142
Heather Ann McSharry	41,057,129	9,325,703	279,201	3,590,142
Rick E Winningham	40,198,037	10,218,742	245,254	3,590,142

Proposal 2

Proposal 2 was to ratify, on a non-binding advisory basis, the appointment of KPMG, Dublin as the independent auditors of the company for the fiscal year ending December 31, 2017 and to authorize, in a binding vote, the board of directors, acting through the audit committee, to determine the auditors' remuneration. This proposal was approved as follows:

For	Against	Abstain	Broker Non-Votes
53,570,010	438,562	243,603	—

Proposal 3

Proposal 3 was to approve, on an advisory basis, the compensation of the company's named executive officers as disclosed in the Proxy Statement. This proposal was approved as follows:

For	Against	Abstain	Broker Non-Votes
47,021,562	3,387,579	252,892	3,590,142

Proposal 4

Proposal 4 was to authorize the company and/or any subsidiary of the company to make open market purchases of the company's ordinary shares. This proposal was approved as follows:

For	Against	Abstain	Broker Non-Votes
50,117,075	199,651	345,307	3,590,142

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Item 6. Exhibits

Exhibit Number	Description of Document
2.1	Agreement and Plan of Merger and Reorganization, dated as of September 19, 2011, by and among Azur Pharma Limited (now Jazz Pharmaceuticals plc), Jaguar Merger Sub Inc., Jazz Pharmaceuticals, Inc. and Seamus Mulligan, solely in his capacity as the Indemnitors' Representative (incorporated herein by reference to Exhibit 2.1 in Jazz Pharmaceuticals, Inc.'s Current Report on Form 8-K (File No. 001-33500) filed with the SEC on September 19, 2011).
2.2	Letter Agreement, dated as of January 17, 2012, by and among Jazz Pharmaceuticals plc, Jaguar Merger Sub Inc., Jazz Pharmaceuticals, Inc. and Seamus Mulligan, solely in his capacity as the Indemnitors' Representative (incorporated by reference to Exhibit 2.2 in Jazz Pharmaceuticals plc's Current Report on Form 8-K (File No. 001-33500), as filed with the SEC on January 18, 2012).
2.3	Agreement and Plan of Merger, dated as of April 26, 2012, by and among Jazz Pharmaceuticals plc, Jewel Merger Sub Inc., EUSA Pharma Inc., and Essex Woodlands Health Ventures, Inc., Mayflower L.P., and Bryan Morton, in their capacity as the representatives of the equity holders of EUSA Pharma Inc. (incorporated herein by reference to Exhibit 2.1 in Jazz Pharmaceuticals plc's Current Report on Form 8-K (File No. 001-33500), as filed with the SEC on April 27, 2012).
2.4	Assignment, dated as of June 11, 2012, by and among Jazz Pharmaceuticals plc and Jazz Pharmaceuticals, Inc. (incorporated herein by reference to Exhibit 2.1B in Jazz Pharmaceuticals plc's Current Report on Form 8-K (File No. 001-33500), as filed with the SEC on June 12, 2012).
2.5	Tender Offer Agreement, dated December 19, 2013, by and among Jazz Pharmaceuticals Public Limited Company, Jazz Pharmaceuticals Italy S.r.l. and Gentium S.p.A. (incorporated herein by reference to Exhibit 2.1 in Jazz Pharmaceuticals plc's Current Report on Form 8-K/A (File No. 001-33500), as filed with the SEC on December 20, 2013).
2.6†	Asset Purchase Agreement, dated January 13, 2014, by and among Jazz Pharmaceuticals International III Limited, Aerial BioPharma, LLC and Jazz Pharmaceuticals plc (incorporated herein by reference to Exhibit 2.1 in Jazz Pharmaceuticals plc's Current Report on Form 8-K (File No. 001-33500), as filed with the SEC on January 13, 2014).
2.7†	Assignment Agreement, dated July 1, 2014, by and among Jazz Pharmaceuticals International II Limited, Sigma-Tau Pharmaceuticals, Inc., Jazz Pharmaceuticals plc and Gentium S.p.A. (incorporated herein by reference to Exhibit 2.1 in Jazz Pharmaceuticals plc's Current Report on Form 8-K (File No. 001-33500), as filed with the SEC on August 5, 2014).
2.8	Amended and Restated Agreement for the Acquisition of the Topaz Portfolio Business of Jazz Pharmaceuticals plc, dated March 20, 2015, between Jazz Pharmaceuticals plc and Essex Bidco Limited (incorporated herein by reference to Exhibit 2.1 in Jazz Pharmaceuticals plc's Current Report on Form 8-K (File No. 001-33500), as filed with the SEC on March 23, 2015).
2.9	Agreement and Plan of Merger, dated as of May 27, 2016, by and among Jazz Pharmaceuticals plc, Plex Merger Sub, Inc., and Celator Pharmaceuticals, Inc. (incorporated herein by reference to Exhibit 2.1 in Jazz Pharmaceuticals plc's Current Report on Form 8-K (File No. 001-33500), as filed with the SEC on May 31, 2016).
3.1	Amended and Restated Memorandum and Articles of Association of Jazz Pharmaceuticals plc, as amended on August 4, 2016 (incorporated herein by reference to Exhibit 3.1 in Jazz Pharmaceuticals plc's Quarterly Report on Form 10-Q (File No. 001-33500) for the period ended June 30, 2016, as filed with the SEC on August 9, 2016).
4.1	Reference is made to Exhibit 3.1.
4.2	Rights Agreement, dated as of April 5, 2017, by and between Jazz Pharmaceuticals plc and Computershare Trust Company, N.A., which includes the Form of Ownership Statement as Exhibit A and the Summary of

	Rights to Purchase Ordinary Shares as Exhibit B (incorporated herein by reference to Exhibit 4.1 in Jazz Pharmaceuticals plc's Current Report on Form 8-K (File No. 001-33500), as filed with the SEC on April 5, 2017).
4.3A	Investor Rights Agreement, dated July 7, 2009, by and between Jazz Pharmaceuticals, Inc. and the other parties named therein (incorporated herein by reference to Exhibit 10.88 in Jazz Pharmaceuticals, Inc.'s Current Report on Form 8-K (File No. 001-33500), as filed with the SEC on July 7, 2009).
4.3B	Assignment, Assumption and Amendment Agreement, dated as of January 18, 2012, by and among Jazz Pharmaceuticals, Inc., Jazz Pharmaceuticals plc and the other parties named therein (incorporated herein by reference to Exhibit 4.7B in the Annual Report on Form 10-K (File No. 001-33500) for the year ended December 31, 2011, as filed by Jazz Pharmaceuticals plc on behalf of and as successor to Jazz Pharmaceuticals, Inc. with the SEC on February 28, 2012).
4.4A	Indenture, dated as of August 13, 2014, by and among Jazz Pharmaceuticals plc, Jazz Investments I Limited and U.S. Bank National Association (incorporated herein by reference to Exhibit 4.1 in Jazz Pharmaceuticals plc's Current Report on Form 8-K (File No. 001-33500), as filed with the SEC on August 13, 2014).

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4.4B	Form of 1.875% Exchangeable Senior Note due 2021 (incorporated herein by reference to Exhibit 4.1 in Jazz Pharmaceuticals plc's Current Report on Form 8-K (File No. 001-33500), as filed with the SEC on August 13, 2014).
10.1#	Settlement Agreement, dated as of April 5, 2017, by and between Jazz Pharmaceuticals, Inc. and Jazz Pharmaceuticals Ireland Limited, and Roxane Laboratories, Inc., West-Ward Pharmaceuticals Corp., Eurohealth (USA), Inc., and Hikma Pharmaceuticals PLC.
10.2#	Pharmacy Master Services Agreement, dated as of July 1, 2017, by and between Jazz Pharmaceuticals, Inc. and Express Scripts Specialty Distribution Services, Inc.
31.1	Certification of Chief Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as amended.
31.2	Certification of Chief Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as amended.
32.1*	Certifications of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Labels Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

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Confidential treatment has been requested with respect to certain portions of this exhibit. Omitted portions have been filed separately with the Securities and Exchange Commission.

† Confidential treatment has been granted for portions of this exhibit. Omitted portions have been filed separately with the SEC.

* The certifications attached as Exhibit 32.1 accompany this Quarterly Report on Form 10-Q pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, and shall not be deemed "filed" by the Registrant for purposes of Section 18 of the Securities Exchange Act of 1934, as amended.

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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Date: August 8, 2017

JAZZ PHARMACEUTICALS PUBLIC LIMITED COMPANY
(Registrant)

/s/ Bruce C. Cozadd
Bruce C. Cozadd
Chairman and Chief Executive Officer and Director
(Principal Executive Officer)

/s/ Matthew P. Young
Matthew P. Young
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

/s/ Karen J. Wilson
Karen J. Wilson
Senior Vice President, Finance
(Principal Accounting Officer)

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